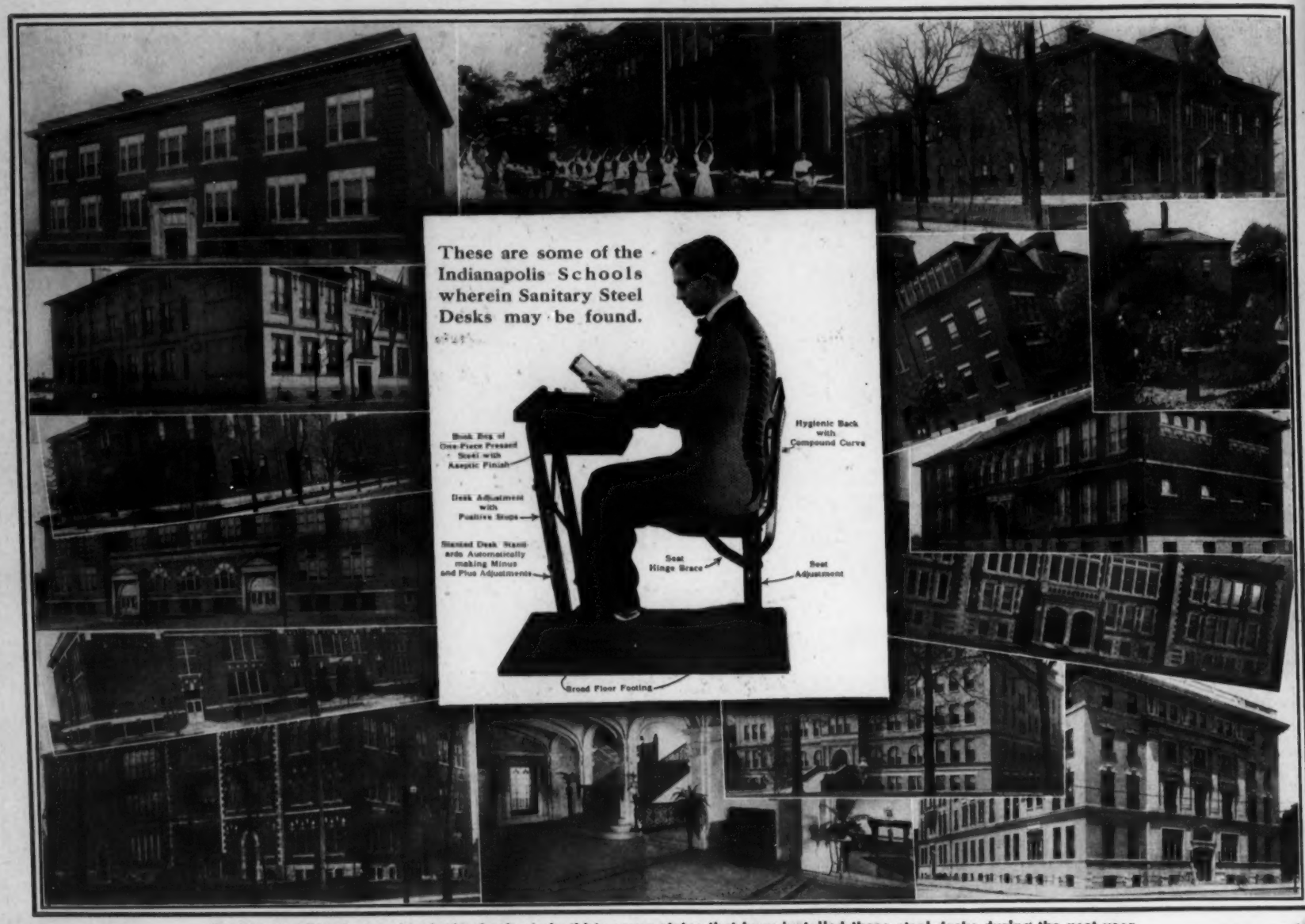
THE AMERICAN
School Board Journal

ANNUAL BUILDING NUMBER

APRIL 1911

WM. GEO. BRUCE PUBLISHER



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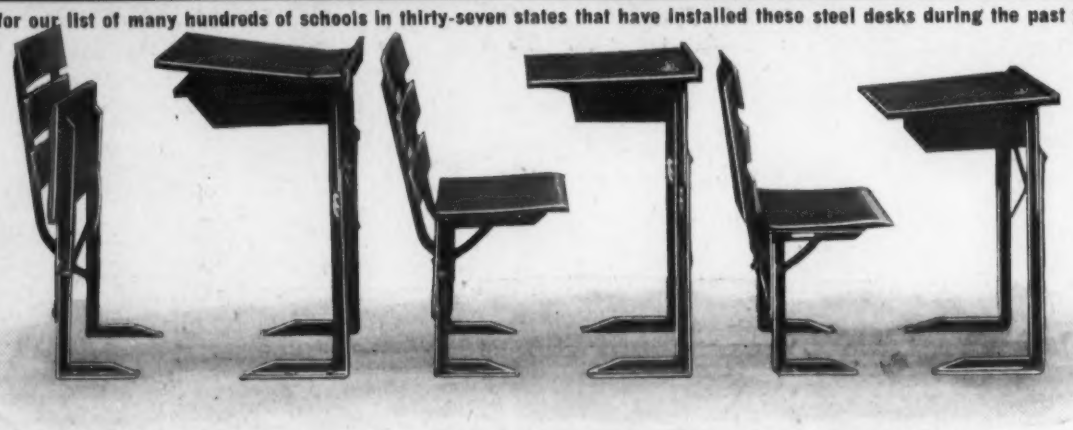

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What Stronger Proof is Required than this Letter?

Sam Houston Normal Institute

Huntsville, Texas.

Office of the Principal

H. F. ESTILL,
PRINCIPAL

TEXAS STATE NORMAL SCHOOL

March 7, 1911.

Mr. John Hall, Jr.,

Treas. & General Mgr.,

Chicopee, Mass.

Dear Sir:--

Replying to your letter I will say that we have given your fountain a thorough test and have also tested other sanitary drinking fountains. Our conclusion is that the Springfield Sanitary Drinking Fountain is the best on the market so far as we know. We should be glad to replace other fountains now in use with yours, and expect to do eventually.

Yours very truly,

H F Estill

HFE-C.

P.S.--

Check in payment of your account will be sent within the next ten days,-- as soon as accounts are officially approved.

List of POPULAR SCHOOL AND COLLEGE Text Books

ABBREVIATIONS

Appleton	D. Appleton & Co.....New York, Chicago, Boston
Barnes	Arthur J. Barnes Publishing Co.....St. Louis, Mo.
Berry	B. D. Berry & Co.....Chicago, Ill.
Britton	Britton Printing Company.....Cleveland, O.
Columbia	Columbia School Supply Co.....Indianapolis and Hamilton, N. Y.
Century	The Century Co.....New York City, Chicago
Ginn	Ginn & Co.....Boston, New York, Chicago
Houghton	Houghton-Mifflin Company.....Boston, New York, Chicago
Jenkins	Wm. R. Jenkins Company.....New York City
Lee	Laird & Lee.....Chicago, Ill.
Lippincott	J. B. Lippincott Co.....Philadelphia, Pa.
Longmans	Longmans, Green, & Co.....New York, Chicago
Merrill	Charles E. Merrill Company.....Boston, New York, Chicago
Merriam	G. & C. Merriam Company.....Springfield, Mass.
Macmillan	The Macmillan Company.....New York, Chicago, Boston
McNally	Rand, McNally & Co.....Chicago, New York
Newson	Newson & Co.....New York, Chicago
Orr	Orr & Lockett Hdw. Co.....Chicago, Ill.
Palmer	A. N. Palmer Company.....New York, Chicago, Cedar Rapids
Peckham	Peckham, Little & Co.....New York
Pitman	Isaac Pitman & Sons.....New York
Prang	Prang Educational Company.....New York, Chicago
Scott	Scott, Foresman & Co.....Chicago, New York
Simmons	Parker, P. Simmons.....New York City
Silver	Silver, Burdett & Co.....Boston, New York, Chicago
Sower	Christopher Sower & Co.....Philadelphia, Pa.
Thompson	Thompson Brown Company.....Boston, New York, Chicago
Zaner	Zaner & Bloser.....Columbus, O.

AGRICULTURE.

James' Practical..Appleton
Burkett's Beginners'..Ginn
Bailey's .....Macmillan
Warren's Elements... "
Voorhees' .....Silver

ALGEBRA.

Young & Jackson's..... .....Appleton
Beman & Smith.....Ginn
Wentworth Series.... "
Hawkes' Advanced... "
Fisher & Schwatt..... .....Macmillan
Hall & Knight..... "
Schultze's Series..... "
Durrell & Robbins'..Merrill
Collins' .....Scott
Aley & Rothrock's...Silver
Atwood Series..... "
Lilley's Series..... "
Hobbe's Gr. Sch..Simmons
Brooks' (2 bks.).....Sower
Brooks' Standard..... "
Fairbank & Hebden's. "
Bradbury-Emery Beginners' .....Thompson
Bradbury-Emery Revised Academic .... "
Perrin's .....Lippincott
Lippincott's ..... "

ARGUMENTATION.

Pattee's Practical..Century
Baker's Prin.....Ginn
Foster's Arg.....Houghton
Laycock & Scales'..... .....Macmillan
Laycock & Spofford's. "

ARITHMETIC.

Appleton Series...Appleton
Britton's Series.....Britton
Moore & Miner's.....Ginn
Prince's ..... "
Smith's ..... "
Wentworth-Smith Ser. "
Colburn's .....Houghton
Kelso High Sch.Macmillan
McLellan & Ames Series ..... "
Byrnes-Richman-Roberts' ..... "
Hopkins-Underwood Series ..... "
Durell & Robbins'..Merrill
Thompson's ..... "
Feimley & Schutt's.McNally
Rand, McNally Series "
Haworth Series.....Newson
Schuyler & Van Sickle "
Myers .....Scott
Cook & Cropsy's.....Silver
Pierce Series..... "
Sensennig & Anderson "
Standard Series..... "
Sisk's Higher..... "
Van Amburgh's..... "
Academic and High Sch. .....Simmons
Graded Number Lessons ..... "
Peck's Series (2 bks.) "
Brooks' Standard Series (6 books) .....Sower
Brooks' Higher..... "
Bradbury's Sight..... .....Thompson
Bradbury's Practical.. "
Nichols New Graded. "
Nichols 3-Book Progressive ..... "
Lippincott's ....Lippincott

ART.

Riverside Art Series..... .....Houghton
Wilson's Picture Study.. .....Macmillan
Famous Painters....Merrill
Principles of Art Ed..... .....Prang
Abbott-Gaskell's ....Silver

ASTRONOMY.

Comstock's .....Appleton
Young's .....Ginn
Ball's Ele. .....Macmillan
Moulton's Intro..... "
Howe's Elements.....Silver
Peck's Constellations. "
Chauvenet's ....Lippincott
Sharpless & Philips's "
Watson's ..... "

BIOLOGY.

Bidgood's .....Longmans
Parker's .....Macmillan
Bailey & Coleman.... "
Pillsbury's .....Silver

BOOKKEEPING.

Gay's .....Ginn
Moore & Miner's..... "
Cole's Accts. ....Houghton
Bogle's Comprehensive... .....Macmillan
Montgomery's Mod..Merrill
Sandy's .....Newson
Bookkeeping Simplified.. .....Pitman
Hall's Art of Accounts.. .....Silver
Mayhew's Series..... "
Lyte's Practical.....Sower
Meservey's Series..... .....Thompson
Meservey's Blanks.... "

BOTANY.

Coulter's Text....Appleton
Coulter's Plant Relations ..... "
Coultêr's Plant Structures ..... "
Coulter's Plants..... "
Bergen & Davis'.....Ginn
Bergen's ..... "
Meier's Herbarium... "
Meier's Plant Study.. "
MacDougal's ....Longmans
Bailey's Series...Macmillan
Object Lessons on Plants .....Simmons
Harshberger's Herbarium .....Sower

BUSINESS ENGLISH.

Altmaier's Commercial Correspondence.Macmillan
Style Book of.....Pitman
Westlake's Letter Writing .....Sower

BUSINESS LAW.

Burdick's Essen...Appleton
Sullivan's Amer..... "
Huffcut's Elements....Ginn
Clark's .....Merrill
Clow's Commerce....Silver
White's ..... "
Wilson & Tucker's International Law.... "

BUSINESS METHODS.

A First Book in...McNally
Hewett's Manual..... "

CHEMISTRY.

Bradbury's Elementary.. .....Appleton
Morris & Irwin's Laboratory Manual..... "
Smith's Inorganic..Century
Smith's College..... "
Smith's Lab. Out 1... "
McPherson & Henderson's .....Ginn
Ostwald & Morse's... "
Williams' ..... "
Garrett & Harden's..... .....Longmans
Muir's Course..... "
Newth Series..... "
Gooch's Lab. Ex'pts.... .....Macmillan
Noyes' Qualitative.... "
Richardson's ..... "
Roscoe & Lunt's..... "
Talbot's Quantitative. "
Peter's .....Merrill
Linebarger's .....McNally
Davis' .....Scott
Appleton's Series.....Silver
Ekeley's Elementary Experimental ..... "
Bennett's Inorganic... "
Mead's ..... "
Greene's .....Lippincott
Moore's ..... "
Wurtz's ..... "

CIVIL GOVERNMENT.

Moses' Government of U. S. .....Appleton
Foreman's Adv. Civics.. .....Century
Boynton's Civics.....Ginn
Macy's ..... "
Seelye's ..... "
Fiske's .....Houghton
Holt's Civic Relations "
Leacock's Ele. of Pol. Science ..... "
Smith's Treg. for Citizenship .....Longmans
Ashley's Am.....Macmillan
Ashley's Gov't and Citizen ..... "
Judson's Y'g Am...Merrill
Shimmell's ..... "
Young's ..... "
Lowry's .....Newson
Hoxie's .....Silver
Lansing & Jones..... "
Martin's Hints..... "
Mowry's Series..... "
Clement's .....Simmons
Furst's Outlines.....Sower
Nation and State..... "
Shepard's ..... "
Constitution of U. S. (with notes) ..Thompson
Schwinn .....Lippincott

COMMERCIAL HISTORY.

Webster's History of Commerce .....Ginn
Semple's Am. History and Its Geographic Conditions .....Houghton
Coman's Indus. History Day's .....Longmans
Bogart's Economic U. S. .....Longmans
of the U. S....Macmillan
Cheyney's Indst. and Social History of England ..... "

COMPOSITION AND RHETORIC.

Thorndike's .....Century
Gardiner, Kittredge & Arnold's .....Ginn
Hanson's ..... "
Genung's Series..... "
Lockwood & Emerson's ..... "
Mother Tongue books "
Webster-Cooley Series... .....Houghton
Webster's Eng. Comp. and Lit. ..... "
Webster's Ele. Comp. "
Bate's Talks ..... "
Cook's Higher Study of ..... "
White's Everyday English ..... "
Whites' Words and Their Use ..... "
Thomas & Howe's Longmans
Baldwin's College..... "
Carpenter's .....Macmillan
Huntington's (2 bks.) "
Lewis' Manuals (2).. "
Lewis' Writing Eng.. "
Robins & Perkins'.... "
Kellogg's .....Merrill
Kavana & Beatty's.McNally
McKeon's Graded Lessons .....Newson
McKeon's Com..... "
Merkley's Rhet..... "
Herrick & Damon's...Scott
Copeland & Rideout's... .....Silver
Welsh's Series..... "

DICTIONARIES.

Appleton's Latin..Appleton
Spiers & Surrenne's French ..... "
Adler's German..... "
Cuyas' Spanish..... "
Liddell & Scott's Greek .....Ginn
Clifton & McLaughlin's French and English .....Jenkins
Webster's New International .....Merriam
Webster's Collegiate.. "
James & Mole's French English .....Macmillan
Tauchnitz's ..... "
James' German and English ..... "
James & Grassi's Italian and English... "
Tolhausen's Technological ..... "
Commercial .....Pitman
Worcester's Standard Series .....Lippincott
Worcester's New School "
Lee's Webster's Series..Lee
Grimm's German-English .....Lee

DRAWING.

Ross's Pure Design..... .....Houghton
Haile's Prac. Drawing.. .....Merrill
Art Education Drawing Book Course...Prang
Course in Water Color "
Art Education for High Schools..... "
Ele. Course in Art Instr. ..... "
Roullion's Mechanical Drawing..... "
Text Books of Art Education (1 to 8) "
Colby's Talks on Drawing, etc. .....Scott
Normal Course.....Silver

ELOCUTION.

Fulton & Trueblood's..Ginn
Shurter's Extemp. Speaking ..... "
Hyde's School Speaker "
Russell's Vocal Culture. .....Houghton
Brown's Philosophy of Expression ..... "
Burrell's Reading and Speaking .....Longmans
Marsland's ..... "
Wooster's Speaker ....Lee
Hafford's .....Lippincott

ENGLISH LITERATURE.

Trent's Brief Am..Appleton
English Classics, 20th Century ..... "
Red Shield Series.... "
Athenaeum Press Ser..Ginn
Hudson's Shakespeare "
Gayley's Eng. Lit.... "
Lewis' Beginnings.... "
Long's Eng. Lit..... "
Minto's ..... "
Manley's Eng. Poetry "
Manley's Eng. Prose.. "
Morley's Eng. Poetry. "
Standard Eng. Classics Series ..... "
American Poems, and Prose (2 bks)..Houghton
Bates' Talks on Lit.. "
Chief Poets Series... "
Hinchman-Gummer's Lives of English Writers ..... "
Higginson & Boynton's Am. Lit..... "
Masterpieces Am. Lit. "
" British Lit. "
Modern Classics..... "
Perry's Prose Fiction "
Page's Am. Poets.... "
Riverside Series..... "
Rolfe's Students Ser.. "
Richardson's American Lit. ..... "
Simond's History Eng. Lit. ..... "
Simond's History Am. Lit. ..... "
Tappan's England's Lit. "
Tappan's England's and America's..... "
Tappan's Am. Lit.... "
Longmans' Classics..... .....Longmans
Arnold's Lit..... "
Dodson's Handbook... "
Longmans' Lit..... "
Bates' Am. Lit..Macmillan
Brooke-Carpenter's... "
Gayley & Young's English Poetry ..... "
Macmillan's Pocket Classics ..... "
Abernethy's Amer..Merrill
Kellogg ..... "
Maynard's Series..... "
Merrill's Texts..... "
Canterbury Classics.. .....McNally
Rand-McNally School Library Series..... "
Curry's Literary Readings ..... "
Standard Literature Ser. .....Newson
Necomer's American..Scott
Newcomer's English...Scott
Welch's Development of. .....Scott
Lake Eng. Classics... "
Silver Series of Classics. .....Silver
Pattee's American Lit. "
Pattee's Reading Courses ..... "
Pattee's Foundations. "
Camelot Ser. (Prose) .....Simmons
Canterbury Poets..... "
Westlake's .....Sower

FRENCH.

Downer's 1st b'k..Appleton
Aldrich & Foster's Ele. .....Ginn
Dufour's Grammar... "
Internat'l Modern.... "
Lang Series..... "
Bercy's Series.....Jenkins
Bercy & Castegnier Grammar ..... "
Bernard's Idiomat. Fr. "
Beauvoisin's French Verbs ..... "
Bernard's Art Interesses en Classe.... "
Churchman's Pronunciation ..... "
De Geer's Lectures and Conversations ..... "
Du Croquet's Series.. "
Fontaine's Les Prosateurs Fr..... "
Julien's Un Peu de Tout ..... "
Marion's Le Verbe... "
Robique's Historiettes et Poesies..... "
Rougemont's Drill Book "A"..... "
Rougemont's Manuel de la. Litterature... "
Sauveur Causeries avec mes eleves..... "
Sauveur & Lougee, Gram. ..... "
Thieme & Effingers' Betis & Swan's Method.. .....Longmans
Longmans' Composition and Language Books ..... "
Grammar ....Macmillan
Keetel's Gram. and Reader .....Merrill
Anecdotes Nouvelles.. "
Elementary French... "
La France ..... "
Maynard's Texts..... "
French Daily Life..Newson
Newson's ..... "
Pitman's .....Pitman
Lake Fr. Classics.....Scott
Lake Fr. Readings.... "
Bordes' Ele. of..... "
Dike's Scientific Reader .....Silver
Douay's Ele. Reader.. "
Through France and French Syntax..... "
Magill's Series.....Sower
Yersin's Method.Lippincott

GEOGRAPHY.

Adam's Com'l.....Appleton
Adam's Ele. Com'l... "
Gilbert & Brigham's Physical ..... "
Frye's .....Ginn
Davis' Physical..... "
Thornton's .....Longmans
Longmans' ..... "
Chisholm's Commercial "
Tarr & McMurry's..... .....Macmillan
Trotter's Geog. of Com. "
Tarr's New Phy's.... "
Dodge's Series.....McNally
Rand-McNally Series. "
Robinson's Commer'l. "
Pitman's Commer'l.Pitman
Inductive Series.....Silver
Lippincott's Gazetteer ..... Lippincott

GEOLOGY.

Brigham's .....Appleton
Norton's Elements....Ginn
Story of Our Planet.. "
Tarr's Elements.Macmillan
Ries' Economic of U. S. ..... "
Scott's Introduction.. "
Winchell's Studies....Scott
Heilprin's Earth and Its Story.....Silver

GEOMETRY AND TRIGONOMETRY.

Failor's Geom.....Century
Wentworth Series.....Ginn
Baker's Geom..... "
Beman & Smith..... "
Bailey & Woods'..... "
Grenville's Trig..... "
Taylor's Trig..... "
Smith & Gale's Anal. Geom. ..... "
Nichols' Trig..... "
Schultze & Sevenoak's Geometry .....Macmillan
Holgate's Geom..... "
Lock-Miller's Trig... "
Durell's Series.....Merrill
Clark's Trig. .....Newson
Welsh's Geom.....Scott
Bush & Clarke's Elements .....Silver
Pettee's Plane Geom. "
Hobb's Geom.....Simmons
Brook's Plane and Solid Geom. .....Sower
Brook's Plane Geom.. "
Brook's Pl. and Spher. Trig. ..... "
Bradbury's Elem. Geom. .....Thompson
Bradbury's Elem. Trig. ..... "
Bradbury's Trig. & Survey ..... "
Bradbury's Academic Geom. ..... "
Chauvenet's Geom. & Trig. .....Lippincott

GERMAN.

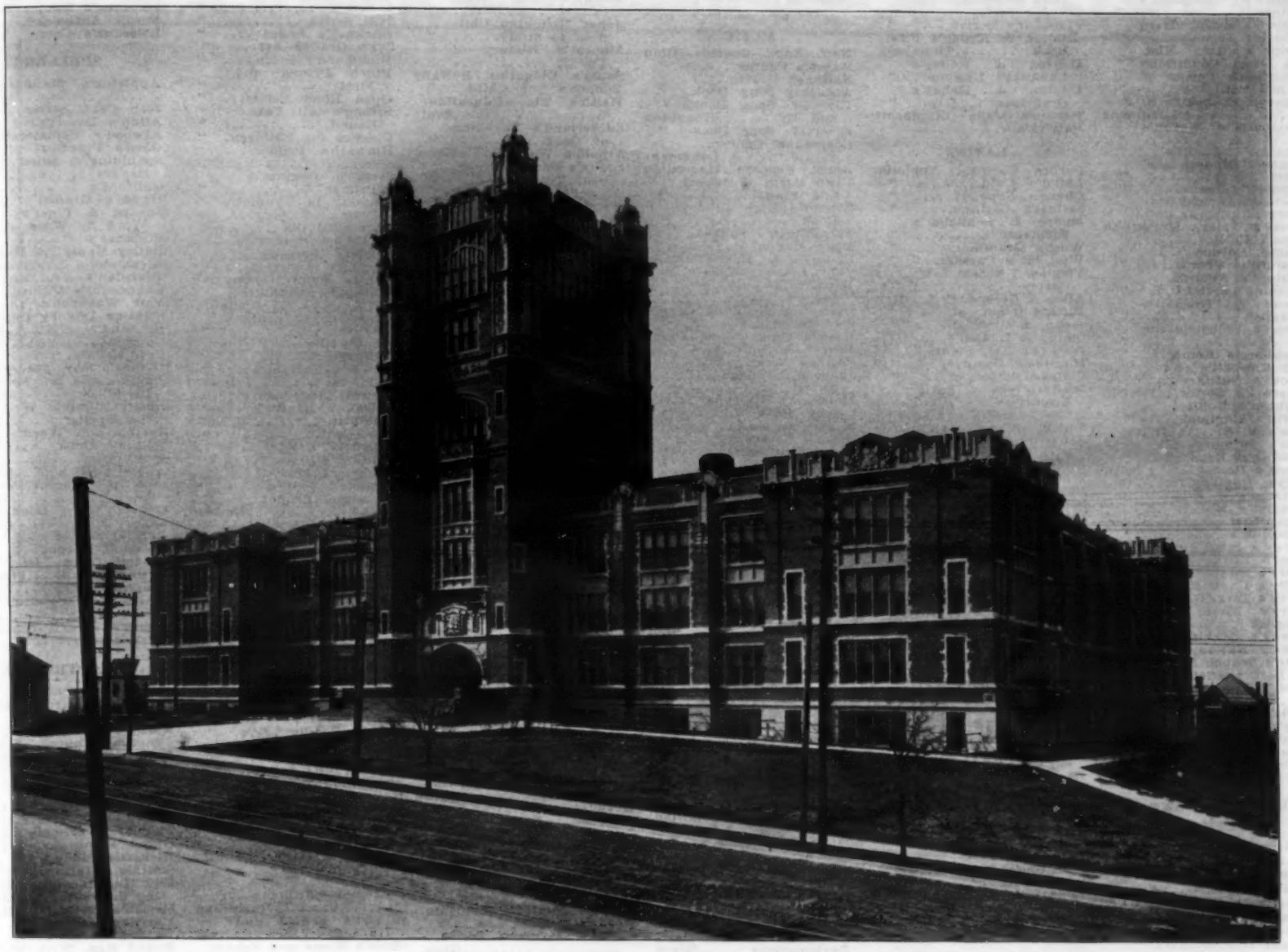
20th Cen. Series..Appleton
Learned's Grammar.. "
Jones' Reader..... "
History of German Literature :....Columbia
Int. Mod. Language..Ginn
Bernhardt's Course... "
Collar's 1st Year..... "
Stein's Exercises..... "
Deutscher Hiawatha Primer .....Houghton
Bailey's Der Praktische Deutsche .....Jenkins
Dreyspring's Constructive Process for Learning Ger..... "
Cutting's Difficulties of Ger. Gram..... "
Schultz Praktischer Lehrgang ..... "
Longmans' Composition and Grammar.Longmans
Althaus' Grammar.... "
Beresford-Webb ..... "
Betis & Swan's..... "
Hewett's Ger. Reader... .....Macmillan
Macmillan's Series.... "
Maynard's Texts....Merrill
Bacon's New..... "
Neue Anekdoten..... "
Deutschland und die Deutschen ..... "
Beginner's ..... "
German Daily Life.Newson
Knoflach's ..... "
Newson's ..... "
Pitman's Practical..Pitman
Becker-Rhodes Ele...Scott
German Stories..... "
German Classics..... "
Müller Series.....Silver
Loesberg's Series..... "
Dippold's Grammar... "
Schmitz gram. ..Lippincott

GREEK.

Goodell's School...Appleton
Smith's Anabasis..... "
Benner's Homer's Iliad "
Morrison & Goodell's Beginners ..... "
Goodwin's Grammar...Ginn
White's First..... "
White's Beginners.... "
Seymour's Iliad..... "
Perrin & Seymour's Odyssey ..... "
Collar & Daniel's Beginners' Companion "
School Classic Series. "
Coll. Series—Authors. "
Bryant's Iliad....Houghton
Bryant's Odyssey..... "
Palmer's Odyssey..... "
Masterpieces of Greek Literature ..... "
Browning's Blanks for Greek Verbs.....Jenkins
Haven's Blanks for Conjugation or Synopsis of Gr'k Verbs "
White's Texts....Longmans
Ball's Ele.....Macmillan
Bonner's Comp.....Scott
Burgess & Bonner Ele. Gram. ..... "

HISTORY.

McLaughlin's American Nation .....Appleton
Wrong's British Nation ..... "
Munro's Middle Ages. "
Whitcomb's Modern Europe ..... "
Munro & Whitcomb's Medieval & Modern "
Gulick's Life of the Ancient Greeks..... "
Southworth's Builders of Our Country.... "
Foreman's U. S....Century
Cheney's England.....Ginn
Emerton' M. Ages... "
Lawler's Essentials of Am. History..... "
Myers' Series..... "
Montgomery's Series. "
Blaisdell's Story of America ..... "
Blaisdell & Ball's Stories ..... "
Fiske's How U. S. Became a Nation.... "
Robinson & Beard's Modern Europe..... "
Robinson's Western Europe ..... "
Brigham's Geog. Influences in Am. His. "
Fiske's U. S.....Houghton
Larned's U. S..... "
Larned's English..... "
Ireland's Story..... "
Ploetz's Epitome of.. "
Riverside Biographical Series ..... "
Tappan's European Hero Stories..... "
Tappan's Story Greek People ..... "



THE HUGHES HIGH SCHOOL, CINCINNATI, OHIO

Architect
J. WALTER STEVENS
St. Paul, Minn.

Plumbing Contractor
WILLIAM ATTLESEY
Cincinnati, O.

Tappan's Our Country's Story ..... "
Tappan's England's Story ..... "
Tappan's Amer. Hero Stories ..... "
Semple's Am. Hist. & Geog. Conditions "
Stevenson's Poems of Am. Hist. ..... "
Bogart's Economic U. S. .....Longmans
Woodburn & Moran's U. S. ..... "
Ransome's English... "
Epochs in Modern History ..... "
Robinson's Roman.... "
Epochs in Ancient History ..... "
Ashley's Amer...Macmillan
Elson's U. S. ..... "
Adams' Europe..... "
Botsford's Greece.... "
Botsford's Ancient.... "
Channing's Series U. S. "
Coman & Kendall's English ..... "
Coman's Industrial of U. S. ..... "
Shuckburg's Rome.... "
Bury-Kimball's Greek "
Renouf's Outlines..... "
Anderson's Series...Merrill
Leighton's Rome..... "
Merrill's England..... "
Mace's U. S.....McNally
Mace's Primary..... "
Meredith's Economic. "
Abbott's Rome.....Scott
Terry's England..... "
Davidson's U. S..... "
Chandler's Makers of Am. Hist.....Silver
Chancellor's American "
Andrew's Institutes... "
Hazen's Elementary.. "
Mowry's First Steps.. "
Mowry's U. S. Hist... "
Mowry's Terr. Growth "
Mowry's First Steps English ..... "
Redway's Making of Amer. Nation..... "
White's School Hist.. "
Am. Hist. Leaflets.Simmons
Harley's Topics in U. S. .....Sower
Morris' Series U. S... "
Stone's England.Thompson
Elson's Story of Our Country ..... "
Morris' Series...Lippincott
Morris' Tales..... "

LANGUAGE AND GRAMMAR.

Supplementary Leaflets.. .....Britton
Whitney & Lockwood.Ginn
Tarbell's Lessons..... "
Knox-Heath's Ele.... "
Lockwood's Lessons... "
Arnold's With Pen and Pencil ..... "
Mother Tongue Books "
Webster's Gram..Houghton
Webster's Ele. Gram. and Comp..... "
Webster-Cooley Series "
Sharp's Elements...Jenkins
Carpenter's Grammar....
Longmans' Grammar..... .....Longmans
Longmans' Composition ....Macmillan
Emerson & Bender's Words Spoken and Written ..... "
Davenport & Emerson's Grammar..... "
Modern English (2 books) ..... "
Woodley's Foundation Lessons ..... "
Kellogg's Comp.....Merrill
Kellogg's Rhetoric... "
Reed & Kellogg's.... "
Reed's Introductory.. "
Language Through Nature, Literature and Art .....McNally
Rand-McNally Prin. Gram. and Comp... "
Rand-McNally's Practical Eng. Gram.... "
Buehler's Modern English Gram.....Newson
Buehler's Mod. Eng. Lessons ..... "
Style Book, Business English .....Pitman
Scott & Buck.....Scott
Bartlett's Series.....Silver
Gilbert & Harris Guide Books..... "
Greenwood's Series... "
Milne's Grammar..... "
Mead's ..... "
Simon's First Year for High Schools..... "
Welsh's Series.....Bower
Flounder's Series..... "
Dunton & Kelley's First Book .....Thompson
Dunton & Kelley's Language Lessons.. "
Dunton & Kelley's Grammar ..... "
Beeton's Gram. .Lippincott
Patrick's ..... "

LATIN.

Forbes' Cicero....Appleton
Laing's Ovid..... "
Chase's Nepos..... "
Sallust's Catiline..... "
Moore & Schlicher's Elements ..... "
West's Grammar..... "
Westcott's Caesar.... "
Virgil's Aeneid by Carter ..... "
Allen & Greenough....Ginn
Buck's Gram. of Oscan. & Umbrian.... "
Collar & Daniell's.... "
D'Ooge's Lat. Comp.. "
Moulton's Comp..... "
College Series of.... "
Masterpieces of Latin Literature ....Houghton
Halsey's Beginner's.Jenkins
Smith's First Year... "
Sauveur First Talks with Caesar..... "
Ritchie's Series..Longmans
White's Texts..... "
Bain's Ovid.....Macmillan
Minckwitz's Cicero... "
Inglis & Prettyman First Book..... "
Hodge's Caesar..... "
Baker-Inglis' Latin... "
Viri Romae.....Merrill
Bellum Helveticum...Scott
Walker's Caesar..... "
Knapp's Aeneid..... "
First Year in Latin..Silver
Gunnison & Harley's Caesar ..... "
Caesar .....Simmons
Cicero's Orations (6). "
Virgil's Aeneid (6 bks) "
Fewsmith's Series....Sower
J. P. Welch's Series.. "
Leverett's Lexicon ....Lippincott

LITERATURE.

(See English Literature.)
Alibone's .....Lippincott
Lippincott's Supplementary Reading . "
Metcalf-Call ...Thompson

LOGIC.

Ballantine's Inductive.Ginn
Lafleur's Ill. of..... "
Creighton's .....Macmillan
Jevon's ..... "
Russell's Ele..... "
Attwater's .....Lippincott

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Hapgood's Needle W'k "
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Ross's Wood Turning. "
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Parks' Educational Woodworking ..... "
Tod's Hand Loom Weaving .....McNally
Industrial Work for Public Schools..... "
Seiden's Series..... "
Patton's Sewing....Newson
Woodwork for the Grades.....Orr
Barnard's Tools and Machines .....Silver
Larsson's Ele. Sloyd.. "
Solomon's Sloyd..... "
Wakeman & Heller's Sewing ..... "

MENSURATION.

Furst's .....Sower

MENTAL SCIENCE.

Baldwin's Ele. Psych.... .....Appleton
Baldwin's Psych..... "
Betts' The Mind and Its Education..... "
Hall's Youth..... "
Buell's Psych.....Ginn
Witmer's Psych..... "
Tichener's Psych.Macmillan
Baker's Ele. Psych.Merrill
Davis' Elements of Psych. .....Silver
Schaeffer's Thinking.... .....Lippincott

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National Course..... "
Academy Song Book. "
Riv. Gr. Song Books I. and II. .....Houghton
Riverside Song Book. "
Longmans' Course..... .....Longmans
Amer. Readers..Macmillan
Rix's Song of School and Flag ..... "
Ziemer's High School Book ..... "
Farnsworth's Songs... "
Rix's Manual..... "
Choral Song Book.McNally
Chor. Instruc. Course. "
Patriotic & Folk Lore Songs ..... "
Brewer & Reddall..Merrill
Sprenkel's Ideal..... "
Beacon Song Collec..Silver
Beacon Series V. Mus. "
Cecilian Series ..... "
Johnson's Songs (2 books) ..... "
Marshall's Halcyon Song Book ..... "
Modern Series ..... "
Normal Course ..... "
Silver Song Series.... "

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Comstock's Ways of the Six-Footed .... "
Conn's Bacteria, etc., in the Home..... "
Hodge's Nature Study and Life ..... "
Long's Wood Folk Series ..... "
Earth and Sky..... "
All the Year..... "
Friends and Helpers. "
Morley's Nature Books "
Weed's Story of Insect Life ..... "
Miller's Bird Stories.... .....Houghton
Burrough's Squirrels.. "
Eckstorm's Woodpeckers ..... "
Sargent's Corn Plants "
Torrey's Everyday Birds ..... "
Holden's Real Things in Nature .....Macmillan
Wilson's ..... "
Shalow & Cullen's... "
Engell's .....Silver
Griffin's Philosophy..Sower

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Espenshade's Forensic Declamations .....Silver

PEDAGOGICS.

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Hall's Child Life and Ed. .....Ginn
Johnson's Plays and Games ..... "
Kern's Country Schools ..... "
Mac Vicar's Principle "
Scott's Social Education ..... "
Tompkins' Philosophy of Teaching ..... "
Tompkins' Philosophy of School Management ..... "
Bryant's How to Tell Stories .....Houghton
Chancellor's Theory of Motives, etc., in Ed. "
Tyler's Growth and Ed. ..... "
Riverside Educational Monographs ..... "
McMurry's How to Study ..... "
O'Shea's Social Development and Education ..... "
Draper's Am. Education ..... "
Ruediger's Principles "
McMurry's Series.... .....Macmillan
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Bagley's Classroom Management ..... "
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Monroe's History of Ed. ..... "
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Tanner's The Child.. "
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Hoyt's Hist. of Mod. Education ..... "
Morgan's Studies ... "
Mowry's Recollections "
Payne's Curricula.... "
Phillips' Old Tales and Modern Ideals ... "
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Smith's Methodology. "
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Boyer's Prin....Lippincott
Lippincott's Educational Series ..... "

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Henderson & Wood-Hull's Ele. ..... "
Hastings & Beach's...Ginn
Gage's Series ..... "
Higgins' ..... "
Miller's ..... "
Millikan & Gale's ... "
Stone's ..... "
Wentworth & Hill's . "
Andrews & Howland's
Watson's .....Longmans .....Macmillan
Crew's Elements .... "
Nichols' ..... "
Shaw's .....Merrill
Mann & Twiss' .....Scott
Mead's Elements....Silver
Smith's Ex. ..... "
Balderston's Elementary .....Sower
Gifford's Ele. Lessons .....Thompson
Balderston's ...Lippincott

PHYSICAL TRAINING.

Plays and Games ..Britton
Anderson's .....Merrill
Enebuske's Progress.Silver
Gymnastic Days' Orders ..... "
Trask's Gymnastics..Sower

PHYSIOLOGY AND HYGIENE.

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Krohn's Graded Les.. "
Gulick's Hygiene Series .....Ginn
Blaisdell's Series .... "
Hough & Sedgwick's. "
Smith's .....Jenkins
Foster & Shore's.Macmillan
Huxley & Lee's .... "
Coleman's Series .... "
Millard's Wonderful House Jack Has .. "
Shaw's School Hygiene "
McIsaac's Ele. ..... "
Peabody's Studies ... "
Hutchison's Series..Merrill
Knight's ..... "
Conn's .....Silver
Smith & Willard's .. "
Stowell's Health Series "
Object Lessons ...Simmons
Lippincott's ....Lippincott
Cutter's Series ..... "

POLITICAL ECONOMY.

Fetter's Principles.Century
Ripley's .....Ginn
Thompson's ..... "
Davenport's ....Macmillan
Ely's Outlines ..... "
Ely & Wicker's Ele.. "
McVane's .....Merrill
Bullock's .....Silver
Andrew's Institutes.. "
Meservey's .....Thompson

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Exercises for .....Barnes
O'Neill's .....Simmons

READERS.

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Jones' Series ..... "
Blodgett Series ..... "
Wade & Sylvester Series ..... "
Hill Series ..... "
Stickney's Series .... "
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Amer. Phonography..Ginn
Isaac Pitman's Course for High Schools... .....Pitman
Business Correspondence in Shorthand. "
Phonography Dict'y.. "
Writing Exercises .. "
Teachers' Handbook. "
Shorthand Gradus .. "
Shorthand Phrase B'k "
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Lippman's .....Lippincott

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Cyr's Libro Segundo.. "
Tarbell's Lessons ... "
Frye's Geografia Ele. "
Jenkins' .....Jenkins
Fontaine's Doce Cuentos escogidos ..... "
Loiseaux's Marianda. "
Cortina's Fortuna ... "
Spanish Instructor .. "
Spanish Daily Life.Newson
Knoflach's ..... "
Grammar .....Pitman
Pitman's Prac. Span. "
Loiseaux's Grammar..Silver
Loiseaux's Reader ... "
Ford's Anthology ... "
Loiseaux's Comp. ... "

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20th Cent. Series ... "
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Atwood's Commercial "
Gove's Practical .... "
Spaulding & Miller by Grades ..... "
Guilford's ..... "
Hazen's Graded .... "
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Stickney's ..... "
Bailey-Manly ...Houghton
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Blaisdell's .....Macmillan
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Morse .....Silver
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Palmer's .....Lippincott

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Greene's .....Lippincott

NEW BOOKS.

The Redway School History. By Jacques Wardlaw Redway. 495 pages, $1. Silver, Burdett & Co., New York.

A Laboratory Manual of Physical Geography. By R. S. Tarr and O. D. Von Engeln. 362 pages, $1.25. The Macmillan Co., New York.

A Text Book in the Principles of Education. By Ernest N. Henderson. 570 pages, $1.75, net. The Macmillan Co., New York.

Children's Classics in Dramatic Form. By Augusta Stevenson. 211 pages, fifty cents. Houghton Mifflin Co., Boston.

Farm Friends and Farm Foes. By Clarence M. Weed. 327 pages. D. C. Heath & Co., Boston.

Captain of the Eleven. By Alden A. Knipe. 270 pages. Harper & Bros., New York.

Favorite Fairy Tales. Harper & Bros., New York.

Songs of a Little Child's Day. Words by Emilie Poulsson. Music by Eleanor Smith. 115 pages. Milton Bradley Co., Springfield, Mass.

The Land of Living Men. By Ralph Waldo Trine. 12mo, cloth, 302 pages. Price, $1.25. Thos. Y. Crowell & Co., New York.

Schrader's Friedrich Der Grosse und Der Siebenjahrige Krieg. Adapted and edited by R. H. Allpress. Price, thirty-five cents. The Macmillan Co., New York.

Zastrow's Wilhelm Der Siegreiche. Edited by E. P. Ash. Price, thirty-five cents. The Macmillan Co., New York.

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Selections from the Riverside Literature Series, for the seventh grade and eighth grade. 256 pages, $0.40 each. Houghton Mifflin Co., Boston.

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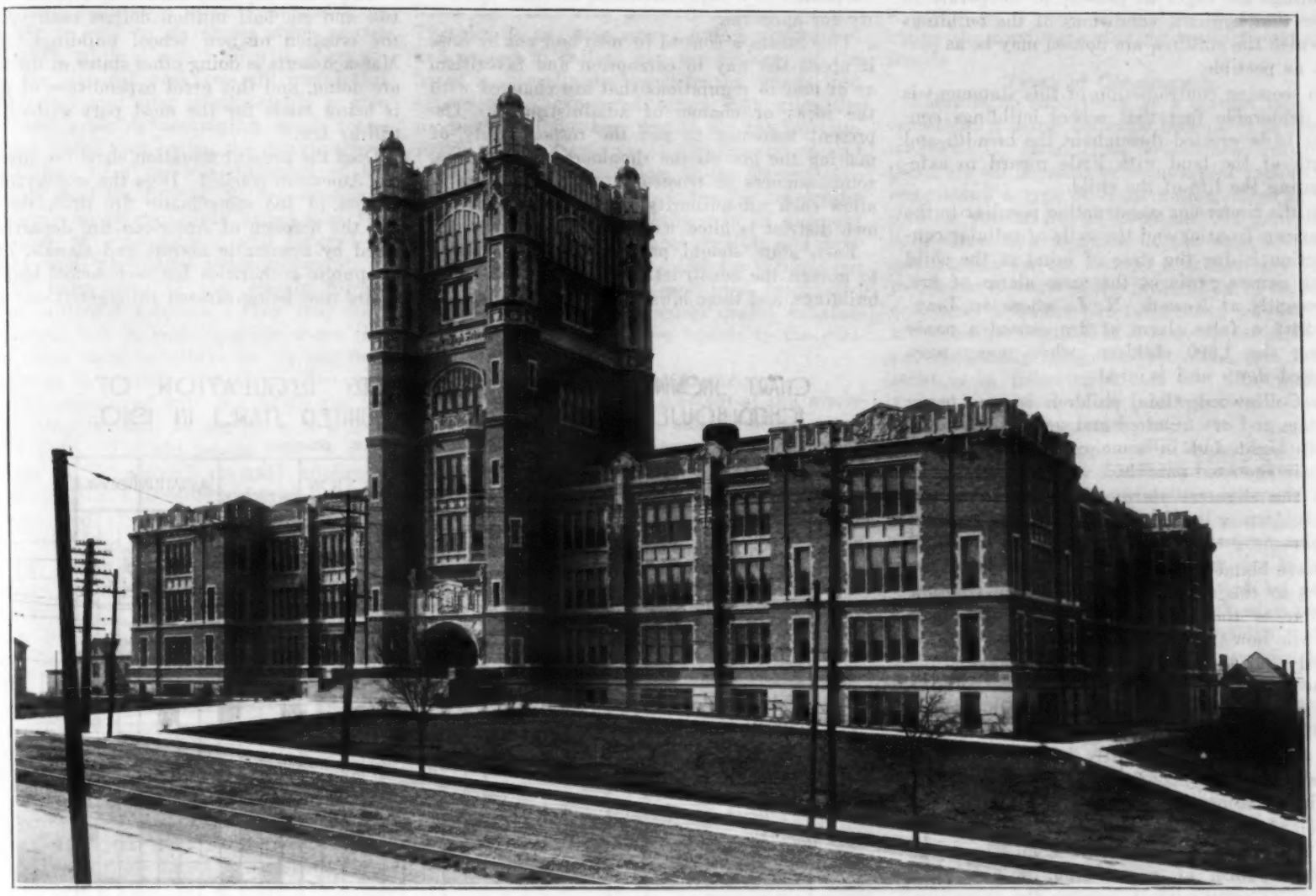
Selections for Study and Memorizing. 121 pages, $0.15. Houghton Mifflin Co., Boston.

Technical Reporting. Manufacturing. In the amanuensis style of phonography. By Benn Pitman and Jerome B. Howard. Paper, 77 pages. The Phonographic Institute Co., Cincinnati, O.

School Board Journal

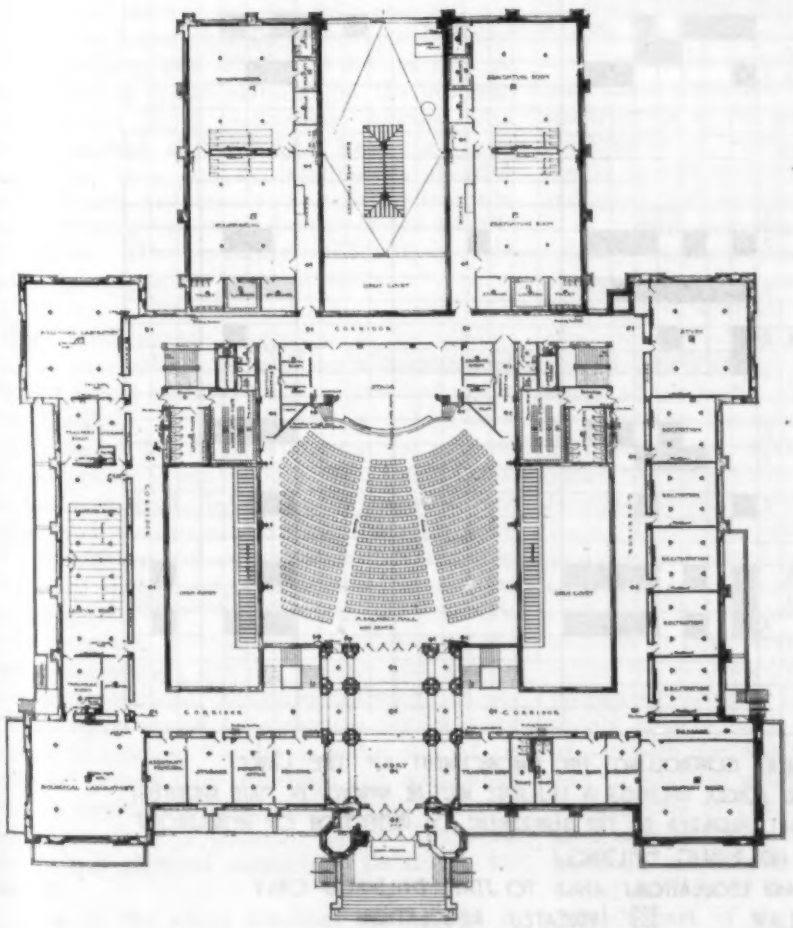
Founded March 1891 by WILLIAM GEORGE BRUCE

VOL. XLII, No. 4 — MILWAUKEE—New York—Chicago, APRIL, 1911 — SUBSCRIPTION PRICE $1.00 PER YEAR

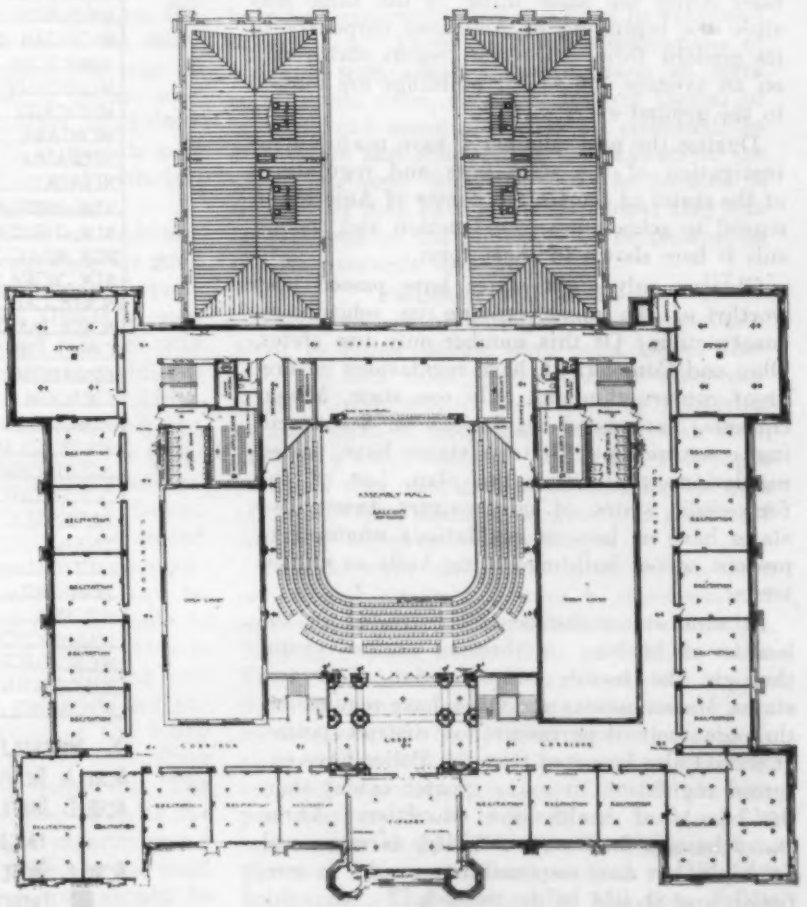


THE NEW HUGHES HIGH SCHOOL, CINCINNATI, OHIO.

J. Walter Stevens, Architect, St. Paul. (See page 37.)



FIRST FLOOR PLAN.



SECOND FLOOR PLAN.

Perils of School House Construction

Unsafe Conditions Due to Lack of Laws

By FRANK IRVING COOPER, Architect, Boston

Scientists, architects, engineers and other men interested in the erection of ideal school buildings are eager at present to co-operate in order that hygienic conditions of the buildings in which the children are housed may be as perfect as possible.

In seeming contradiction of this statement is the deplorable fact that school buildings continue to be erected throughout the breadth and length of the land with little regard to safeguarding the life of the child.

To the tinder-box construction peculiar to the American frontier and the evils of cellular construction is due the state of mind of the child which causes panic at the mere alarm of fire, as recently at Newark, N. J., where on January 26th a false alarm of fire caused a panic among the 1,800 children, when many were knocked down and injured.

In Collinwood, Ohio, children became panic stricken and one hundred and seventy-four died within sight and in some cases within touch of their agonized parents.

At the slightest alarm of fire panic among the children is the first thing the principal and teachers have to guard against.

I have blamed the dread of fire which causes panics to the evils of tinder-box construction peculiar to the frontier, and the reader may now ask how Newark and Collinwood can be quoted after speaking of a construction peculiar to the frontier. The fact is that this cellular construction is not limited to the rough wooden buildings of the frontier, but is just as noticeable among the more costly buildings of our towns where it is disguised behind a mere shell of brick or stone.

Even the high premiums by which the American insurance companies are combating this dangerous form of construction is not sufficient to do away with it, because the cause lies chiefly in the habits of carpenters, masons, and workmen of other building trades, who have been doing the same thing in the same way since the beginning of American carpentry in its modern form. A recent report states that on an average 156 school buildings are burned to the ground every year.

During the past summer I have made an investigation of the state laws and regulations of the states of the United States of America in regard to schoolhouse construction and the result is here shown in chart form.

Observe only eight states have passed laws worthy of the name bearing on schoolhouse construction. Of this number only two states, Ohio and Connecticut, have regulations on fireproof construction and only one state, Massachusetts, has passed regulations on fire-retarding construction. Sixteen states have passed regulations controlling the plan, but of the forty-eight states of our country twenty-two states have no laws or regulations whatever to prevent school buildings being built as crematories.

In nine states the control is rested in the boards of health; in thirteen states control through the boards of education, and two states, Massachusetts and Ohio, have regulations through their departments of district police. It should also be noted that the Police have enforced regulation to a far greater extent than the boards of health and education. Three states have a dual responsibility, as a general principle, but dual responsibility results in confusion and should be deprecated.

In a majority of the cases the regulations state that plans for school buildings must be submitted to a superintendent or other authority for approval.

This means a control by men and not by law; it opens the way to corruption and favoritism or at best to regulations that are changed with the ideas or change of administrators. The present tendency to put the responsibility of making the law on the shoulders of inspectors, commissioners or trustees and the tendency to allow each sub-authority to make rules for his own district is filled with evil possibilities.

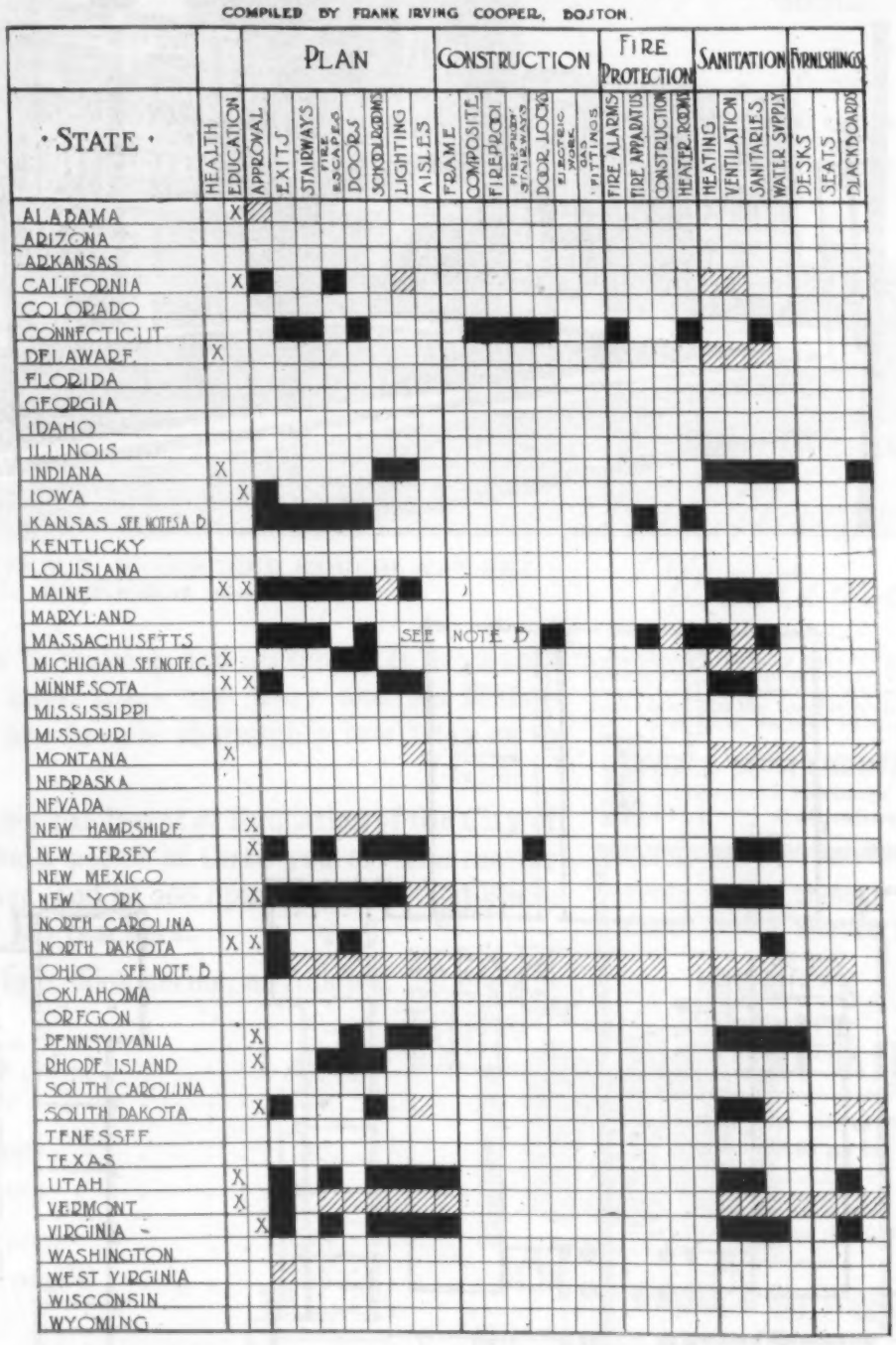
Each state should pass schoolbuilding laws to govern the construction of all of its school buildings, and these laws should be administered by a strong general authority with as many inspectors as may be needed to cover the work.

The state of Massachusetts expends nearly two and one-half million dollars each year for the erection of new school buildings. What Massachusetts is doing other states in the Union are doing, and this great expenditure of money is being made for the most part without control by law.

Does the present situation show the intent of the American people? Does the wonderful perfection of the schoolhouse fire drill, the skill and the heroism of American fire departments, aided by automatic alarms and signals, excuse the public authorities for such school buildings as are now being erected throughout our land?

CHART SHOWING STATUS OF COMPULSORY REGULATION OF SCHOOLHOUSE CONSTRUCTION IN THE UNITED STATES IN 1910.

COMPILED BY FRANK IRVING COOPER, BOSTON



X INDICATES DEPARTMENT CONTROLLING THE ENFORCEMENT OF THE LAWS

NOTE A THE PLANS FOR SCHOOL BUILDINGS IN THIS STATE MUST BE APPROVED BY STATE ARCHITECT

NOTE D THESE RULES ARE PREPARED BY THE DEPARTMENT OF INSPECTION OF WORKSHOPS FACTORIES AND PUBLIC BUILDINGS.

NOTE C THESE LAWS AND REGULATIONS APPLY TO STATE BUILDINGS ONLY

■ INDICATES LAW ▨ INDICATES REGULATION

The Administration of School House Construction

By D. C. NEWMAN COLLINS, Architect and Engineer, New York City.

In all worldly progress it is fortunate that we are held down by physical limitations. It breeds caution and more healthy measuring of consequences. A man born with great physical strength and endurance often has confidence that is apt to lead to an abuse which causes sudden death, while a man born with a knowledge of his physical weakness will guard this vulnerable spot and plug along steadily to ripe old age and probably accomplish much more. The school board that begins the establishment of lofty ideas with reckless disregard of the future will meet the fate of the over-confident, while those who go cautiously ahead with full appreciation of consequences will proceed to a healthy and wholesome accomplishment.

We all have more or less clearly formed ideals on different subjects. They may have been thought out in such tangible shape that we can show them to others as we see them or they may be entirely visionary. The more we become acquainted with our ideals the less visionary they become; we see them in a more practical light. The old saying that "a little knowledge is dangerous" may be applicable to the school board members who have visionary ideals and who strongly insist on their adoption with the result of wholesale extravagance that means a hardship to the tax-paying community.

It is, of course, unfair to expect a school board to be practical architects, engineers or builders, but it is reasonable to suppose that they will fortify this weak spot by the selection of an architect and engineer who can, and will, spend time and thought enough to enable them to intelligently decide where to draw the line between visionary and practical details; to direct them how to proceed and when to stop and to point out where sentiment breeds financial loss. It is the duty of the school board to decide the various questions involved, rather than turn over a vast sum of money to be disposed of by an architect simply because it is his business and they know nothing about it.

They will have to pay the bills and will ultimately be responsible for the proper delivery of the material and labor paid for, as well as the suitability of the material for the purpose. An architect is a professional adviser who should present the different items in such shape that they can be intelligently decided by the board and then arrange for the safe and satisfactory accomplishment of the accepted details. His reputation will not do this unless accompanied by loyal energy.

The Essentials.

The fundamental necessities to be considered in developing and building a modern and efficient school building may be classified under four headings, and while each will lead to a multitude of details, it will serve the purpose of this article to concentrate upon them. First, the building should be reasonably fireproof, sanitary, and conservative in maintenance cost. The furnishings should be substantial and sanitary; the environment, wholesome. Second, the building should be refilled at proper intervals with pure air, mechanically regulated to the right temperature for all seasons and with a proper amount of moisture delivered in it. Third, there should be a suction air cleaning system to promote cleanliness and purity of air and also permit more thorough and economical janitor service. Fourth, modern and well ventilated sanitary equipment that will nourish moral and physical cleanliness should be installed.

Each of the above headings are subject to complete analysis, not only for first cost but for maintenance and operating cost. A small oversight in this may result in a fixed operating charge that is a perpetual drain upon funds and may amount to interest on the cost of many times the value of a properly applied remedy. Theories do not save money unless worked out and proved in dollars and the problem of the board is, literally, to translate the details into satisfactory commercial terms that show the production of the best results for the least investment and running cost. Ornamentation and pretty effects are secondary to the above classified items, which are necessites for developing health and throwing off the grip of sickness. Upon them depends physical comfort and mental energy that are so essential for turning out a steady stream of clean, well bred, bright and thrifty pupils who will reflect credit, satisfaction and invaluable future benefit to the community.

Utilizing Local Markets.

The exterior should be substantial and wholesome. It should be plain and simple in treatment and wherever economy in cost is vital, the material should be selected to suit local markets and be made very moderate in cost. Where unlimited funds are available, it is all right to buy elaborate enrichments that can be pointed at as architectural gems, but it should be considered that this is principally a matter of pride and does not assist in turning out a better grade of the product that a school is built to produce.

The cost of a building is made up of a multitude of different things that have to be manufactured elsewhere, and bought, handled and transported to the building. Each operation on every one of them adds to the cost of the completed work. One kind of material that is cheapest and best in one locality will be prohibitively expensive in another when compared with some local supply that can be more readily delivered. For instance, roofing slate, in a certain territory, may be the cheapest and best type of roof covering while fifty miles away the cost of handling, loading on cars, freight and rehandling to truck to the building will run up the cost beyond its economic use. It is the same with other materials. In deciding the type of construction to be used, from a dollars and cents point of view, local market conditions should be well understood, both as regards cost and quick and convenient delivery of material.

The Architect and the Board.

Many school boards will select an architect of distant location upon his reputation for good work in this line; his achievements are impressive and convincing. It should always be considered that pictures and printed talk are only a part of the battle. There are three evolutions of process in the operation of school building. The first is an analysis of modern theories, governing the efficient development of the problem, and recording them in plans and specifications. This is generally done by the architect, engineer and school board jointly. The second step is to translate these records into commercial terms of material and labor that can be assessed in local market values and be made to reflect the estimated cost of the work. This is necessarily done by contractors in bidding and should also be done by the architect and engineer both for the information of the board and to establish greater strength in controlling expenditures and in enforcing deliveries. The third and last item in the process includes the physical, commercial and legal supervision of actual delivery of the goods. This is the most difficult part of the operation and should be done by the architect who prescribes the material and methods; and, the time to do it is before bills are paid. All of these processes should be controlled by the architect and engineer and it is hard to see just how he can do it unless he is close at hand at all times and knows the conditions that generally mould the results.

Types of Construction.

There is no such thing as a certain type of construction being desirable because it is fashionable. If, aside from ornamental features there are no physical or commercial factors to recommend a type of construction, there is no sensible reason for its adoption. It generally boils down to a selection of the most suitable construction for the money; it is also very easy to become extreme in the prosecution of an idea and carry a matter like fireproofing to such an unreasonable extent that it is conspicuous without necessarily being healthy. The rare judgment is in following a safe and sure middle ground that involves an intelligent reason and avoids noticeable extravagance.

It seems to be generally understood that wooden construction in floors and roof, for buildings of any size, while it is cheap, is not a wise economy because of fire hazard, decay and insanitary results. The use of structural steel in school buildings of average size is very expensive and generally unwarranted by ordinary requirements. Structural steel, when properly protected from fire and corrosion, offers probably the best know type of construction where it is needed and has no limit to its application. Since the development of reinforced concrete construction we have a well qualified substitute at much less cost and fully as efficient a system up to a certain limit. For the floors and roof of a school building this limit is not likely to be reached, unless the building is many stories high. If properly built concrete construction is fireproof, sanitary and permanent. The materials are easily obtainable in any populated district and its use is to be recommended, with emphasis on the fact that it must be designed and executed by men who have had experience, and must not be entrusted to amateurs. There are many combinations of concrete with other materials, such as terra cotta, brick, stone, etc., that present factors of economy and many advantageous combinations of mixture and reinforcing, well known to the expert engineer. Such floors can be finished in concrete or may have good wood tops; they can be plastered on the underside or be painted as the requirements demand.

Partitions and Walls.

Partitions can be built permanently and fireproof by either hollow terra cotta blocks plastered on both sides or by blocks of other material. Good partitions are made by plastering on both sides of metal lath stiffened with steel, making a solid concrete slab of great strength which is very thin and saves considerable area of floors. The selection is greatly a matter of cost and comparative advantages.

Outside walls are also subject to the same commercial analysis. From a standpoint of service and satisfaction and easy construction, there is nothing better than good brick walls. They can be safely built anywhere and can be made as ornamental and expensive, or as cheap as the taste of the designer or the pocketbook of the client will allow. As a matter of quick and easy erection it is possibly better to support concrete floors and roof on posts of the same material that will permit of this part of the work being completed without waiting for brickwork. The brick walls will then follow along as filling walls. Many instances of pretty

effects and economy are made evident by the substitution of hollow terra cotta blocks for bricks and plastering the exposed surfaces with plaster stucco. Such construction while being fireproof and cheap does not compare in substance with a brick wall, either in weight or strength. Hollow blocks are not suited to carrying heavy loads unless filled with concrete and stiffened with steel; they then become nearly, if not quite, as expensive as brickwork.

Buildings with a plastered, or stucco, outside finish are more and more in evidence every day and in some cases are beautifully treated. In southern or warm climates there is little question of their durability. In colder climates the possibility of rain penetrating the plaster and freezing behind it, and thus tending to break it away, together with the difficulty of getting good material and satisfactory methods of application, might lead to a desire for a longer test in service than we have had as compared with brick. In such a plastered surface it is hard to avoid the appearance of cracks in the stucco, both from shrinkage of the wet plaster in drying and from settlement of the building. Cracks are here made more noticeable because of the large unbroken surfaces generally used in plastered treatment. Buildings can be made beautifully white by careful selection of the ingredients used.

Heating and Ventilation.

In regard to heating and ventilating, the requirements are briefly emphasized by state laws that, as far as they go, agree with the best authorities. The amount of fresh air per pupil is easily computed in totals, and with this fixed amount as a basis of the problem, the means of heating the air and transporting it follow regular lines of computation well known to the engineer, and pretty well established by precedent. The size of flues and registers is an important part of the building design and can be readily determined to produce the required volume of air at a velocity low enough to prevent noise and draft. The source of heat can also be computed when we have decided upon the system to be used. The cost of operating a heating system is in many ways more important than first cost. I know of new schools that are conspicuous in modern features and low cost, report a monthly cost as high as $60 for power to run the heat fan only. Think of that, at least $400 per year, and every year, for electric power to drive this motor, without allowing anything for interest, repairs and depreciation. Their annual coal consumption will run up to 125 tons of pea coal at $4.50, or $520. From a business standpoint, $400 is 5 per cent on $8,000. This sum, probably twice the cost of the entire system, is a perpetual tax, when there are similar plants running every day with practically no cost for power.

It seems that it would only require a little ingenuity and thought from any competent architect and engineer to plug up these financial leaks. I do not believe a school board would endorse such a system, in order to save a few hundred dollars first cost, if it knew the penalty in advance. It is a lame excuse that other people are pleased with the same system. There are no excuses other than indifference, ignorance of the fundamentals of a heating problem or being penny wise and pound foolish. These things should be approximately measured in advance and the selection of an architect should recognize his ability to bring out these economies, a single one of which might warrant the payment of his whole commission.

Vacuum Cleaning.

When it comes to vacuum cleaners the matter of cost is apt to interfere with their adoption. It should not do so if economies are carefully studied. They are as necessary to purity of air as good ventilation, and if thoroughly considered, will return a saving in labor in cleaning that will partly, if not entirely, offset the cost of power to run them. I believe that they should be considered a necessary school equipment, and attention should be applied to a demonstration of how cheaply they can be introduced and operated. A portable plant to be carried around from room to room may look good from a view of initial investment and permit the board to dismiss the subject for future consideration. But a portable is not cheapest in the end, nor can a good system be put in as easily after the building is completed.

The installation of a good system is not a great expense if other power in the school can be utilized to run it for the short time it is required each day. The operating cost, once installed, is reduced to a point where the saving of wages to one assistant sweeper may pay it all. With a modern system that is piped from basement to each room there is no dust or noise in operation and the corridors and other unoccupied rooms can be swept during school hours without any inconvenience whatever and at a great saving in janitor's time. There is no dusting to be done. It can all be done in one operation, which is another saving. If teachers or pupils have to stay after hours for any reason the sweeping can go on just the same because there is no dust or noise.

The Correct Theory of Economy.

In regard to the cost of power, it is a well known fact that manufacturers and industrial owners are universally compelled to look well after the cost of running their plants. They often build entirely new in order to cut down running expenses. They find their competitors putting in modern appliances to enable them to sell at lower prices and larger profits. They must meet selling prices in competition, even though operating costs are not dropping. They consequently spend vast sums of money in power economies and machines to cut extravagance and lower their annual cost of operation.

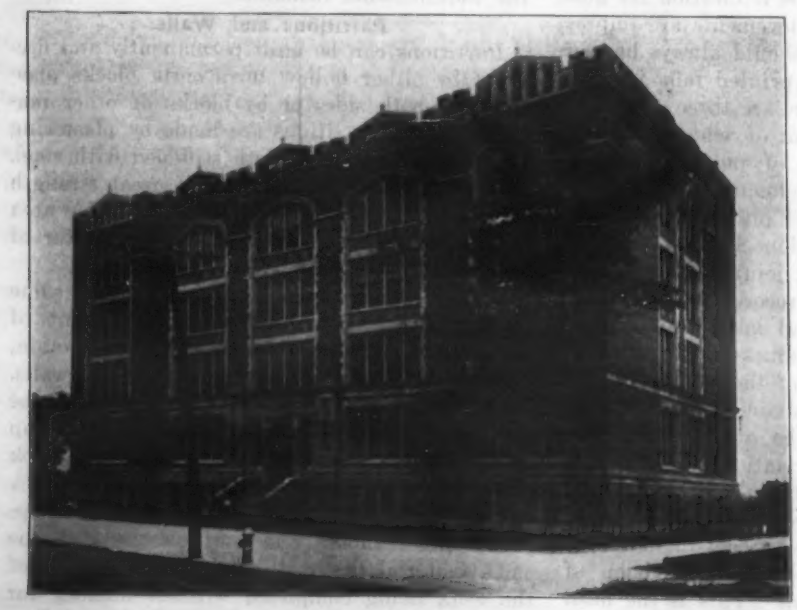
From some points of view a schoolhouse is similar to the above. It is an institution that has to be built, maintained and operated. It is built for a purpose and must be and should be most efficient in its functions. It seems a pity that there is not some vital pressure behind it, like competition in operation, that will compel a more thorough study of economy in operation. In schoolhouse design there seems to be perfect contentment in following precedent established in other schools. The subject is seldom rehearsed from the bottom and conditions follow the old rut.

Even an architect who does not personally go into such mechanical trifles as heating and depends upon the different heating and ventilating specialists to present a good system for him, will probably get one or more good systems suggested and will promptly attract attention by throwing them out because they are, say $1,000, higher in cost than other inferior suggestions that will be most extravagant in operation. If you show an industrial owner where he can spend $1,000 that will yield him 40 per cent profit every year, by saving operating costs, he will not hesitate because he knows he will have his money back in two and one-half years and he then will get a perpetual revenue from the savings.

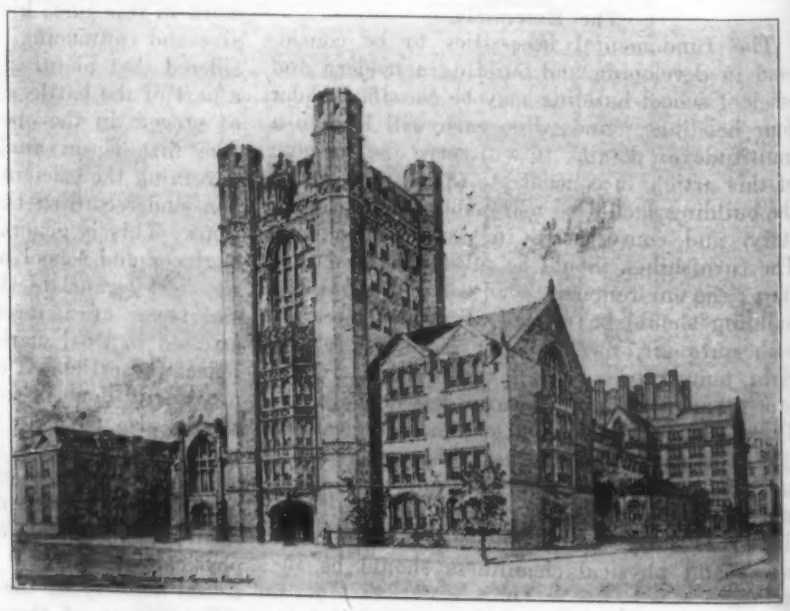
A school board can be just as enterprising. If it does not, it may be because it is not properly advised; it may be because the architect cares for beauty before service; it may be that he knows it but feels that on account of the cost of school buildings and equipment being well known he will be criticized more for high cost of building than for extra operating costs that will not be noticed; or it may be simple indifference or lack of energy. Anyway, it would be better if business principles were adopted here as elsewhere.

There is only one policy to adopt by a school board in working out a new school building and that is to organize an efficient staff to advise them. Success depends upon it. The architect or engineer, or both, must be good business men as well as artists or mathematicians. Manufacturers, contractors and commercially inclined specialists should not be taken into their confidence until they are able to tell them what is to be done, and how.

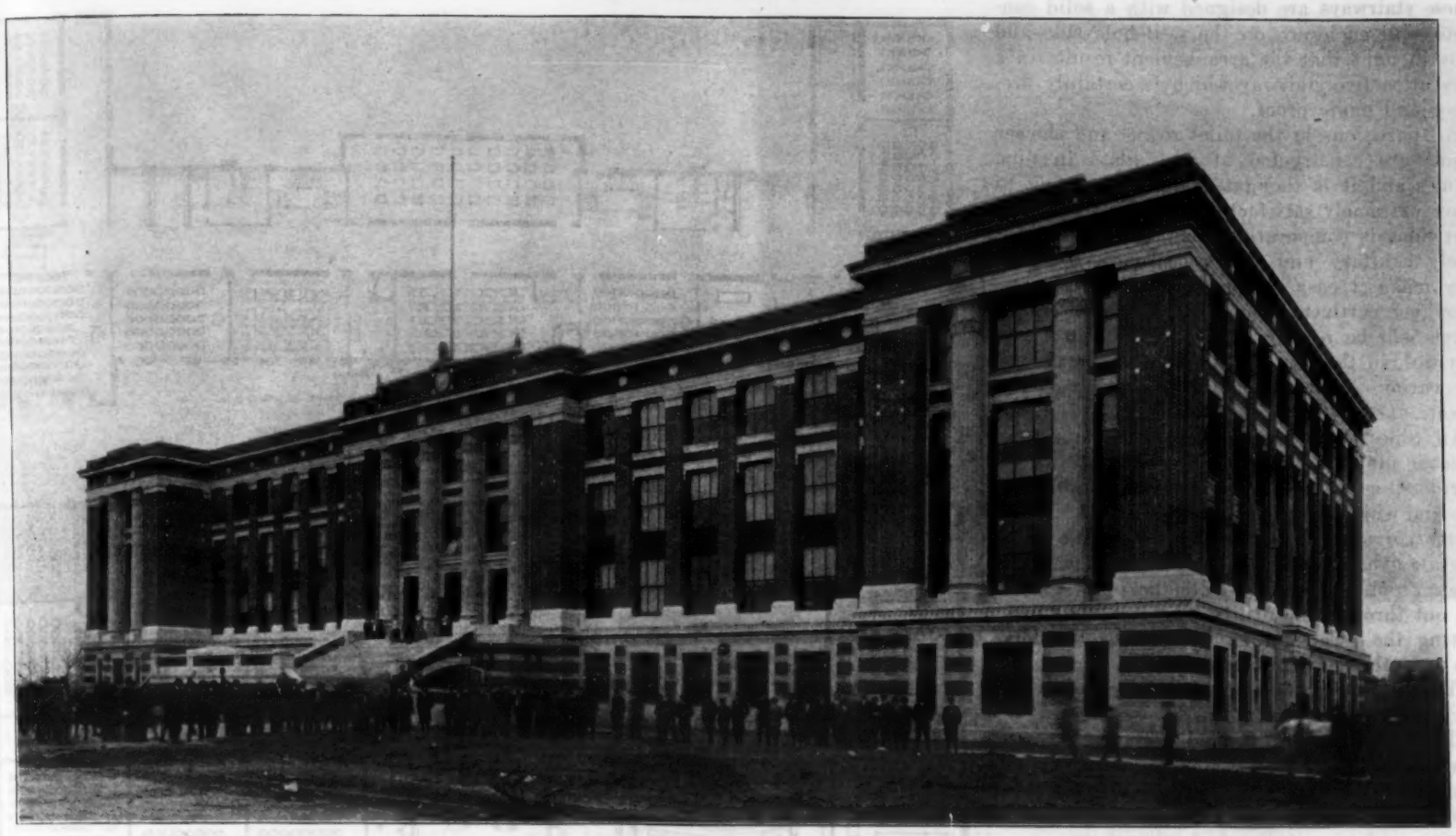
(*Concluded on page 52*)



BOROUGH OF PUBLIC SCHOOL 160, BROOKLYN, NEW YORK CITY.
Mr. C. B. J. Snyder, Architect.



PROPOSED NEW BUILDING FOR THE NORMAL COLLEGE OF NEW YORK CITY
Part of a Magnificent Group of Gothic Buildings planned by Mr. C. B. J. Snyder.



THE MAURY HIGH SCHOOL, NORFOLK, VA.

A MODEL HIGH SCHOOL BUILDING

By Neff & Thompson, Architects

There has just been completed at Norfolk, Va., a new fireproof $250,000 high school building which the board of school trustees have named in honor of Matthew Fontaine Maury, the noted Virginian geographer who has often been called "The Path-Finder of the Seas."

A study of the plans and photographs which appear in the pages of this issue will show the arrangement of the various departments and features of design and finish.

It is thought that school authorities and those interested generally in the construction and planning of school buildings will be interested in a consideration of the problem of which this structure is a solution, and will also be interested in an examination of the details of cost of construction and equipment, and the factors influencing the cost of the various parts.

The building has been designed to meet the needs of a community of about 100,000 population with but one high school, therefore requiring that this building should be arranged to accommodate all of the special departments usually included in high school courses of instruction.

The special departments include: A manual training department, consisting of wood bench shop, wood turning shop, machine and forge shop.

A science department consists of laboratories for biology, chemistry and physics, there being required in connection with each of these laboratories a smaller room to serve as an instructor's office and supply room, and a large lecture room with demonstration tables, tablet arm chairs and elevated seat platforms.

A commercial department to include a classroom equipped with special bookkeeping desks, and also provided with a banking counter and the usual accessories of a business course, and a third classroom for lectures and class work in stenography, commercial spelling and practice.

A drawing department arranged to accommodate classes in mechanical and free-hand drawing.

A physical department to consist of gymnasium with lockers and shower rooms adjoining for boys and girls.

An auditorium to seat 1,000 pupils and arranged with small rooms, off stage, which could be used for dressing rooms for special entertainments.

It was also considered desirable that the building should contain an emergency hospital room, lunch room for teachers, lunch room for boys, lunch room for girls, kitchen for preparing hot lunches, laundries for laundering linen, gymnasium suits and towels; store rooms for gymnasium suits and supplies; offices for the heads of the various departments, and a reference library for use of teachers and pupils, a music room for teaching instrumental and vocal music, a teachers' rest room, a principal's private office, principal's clerical office, reception room, engine room, boiler room, etc.

Re-inforced Concrete Stairway. Fitted with Carrara glass risers and composition treads. A model type of stair designing and construction for schoolhouses.

Individual metal lockers were desired for the pupils and these have been arranged in the form of alcoves conveniently located in all corridors. Toilet rooms are located on each floor for teachers, boys and girls.

There are many unique features of construction and finish which have been used in the building. Some of the more noticeable are as follows:

The materials used for the exterior are granite, polychrome terra cotta and rough cast tapestry brick. The exterior is of pure Greek design and presents a most imposing and dignified appearance.

The floors throughout the entire building, in classrooms, corridors, toilet rooms, and in fact in all parts except the basement, are of composition. The material is put down directly upon the concrete floor slabs in a plastic form and hardens and forms a surface which is practically noiseless, and is sufficiently soft and resilient to make the use of the floors very comfortable. This same material is also used to form a sanitary base for all classrooms, and for treads and wall strings for all stairways, and to form the seat platforms for all lecture rooms and for the auditorium. It is believed that the manner in which the building has been arranged to receive this composition flooring, and the manner in which the material has been used has resulted in the cost of this feature being actually less than would have resulted had the customary maple floors been used.

The stairways are constructed entirely of reinforced concrete and are finished with risers of black carrara glass, with patent brass and lead safety treads and nosings, and with this composition material as treads and wall strings.

These stairways are designed with a solid concrete wall enclosure on the well hole side and it is thought that the arrangement results in a very attractive stairway which is certainly fireproof and panic proof.

All partitions in the toilet rooms and shower rooms are constructed of wire glass in pipe frames and it is thought that this is going to prove extremely satisfactory. The cost of such partitions is comparatively low; they are absolutely sanitary and the appearance is good; they make it easy to thoroughly light the various compartments, and they have a value which will be readily recognized by school authorities, in that, by the use of such partitions the various compartments become only semi-private and not absolutely so.

All pipes, tanks, valves, etc., in connection with the plumbing fixtures are located in utility corridors, which are provided with wire glass tops and which are therefore well lighted. These utility corridors are ventilated by means of a separate exhaust fan which insures a movement of air from the hallways into the toilet rooms and out through the utility corridors, thus preventing the escape of any objectionable odors into any other parts of the building.

The building is piped for and equipped with a system of vacuum cleaning.

All classrooms are lighted for night work with high efficiency reflectors and tungsten lamps. The auditorium is lighted by a system of indirect illumination which produces a very pleasing and practically shadowless light.

A system of telephones connects all rooms in the building. A system of secondary clocks is provided in connection with a program instrument, by means of which the various classes are controlled. By a special attachment to each telephone a fire alarm can be sent in from any room in the building.

The laboratories are provided with electric attachments for motors, projectoscopes, etc.

The building was designed to accommodate 1,000 pupils. If the capacity, however, is figured according to the usual rule which provides that to the seating capacity of all classrooms should be added one-half of the seating capacity of the various special departments, then the building should be properly rated as suitable for 1,100 pupils.

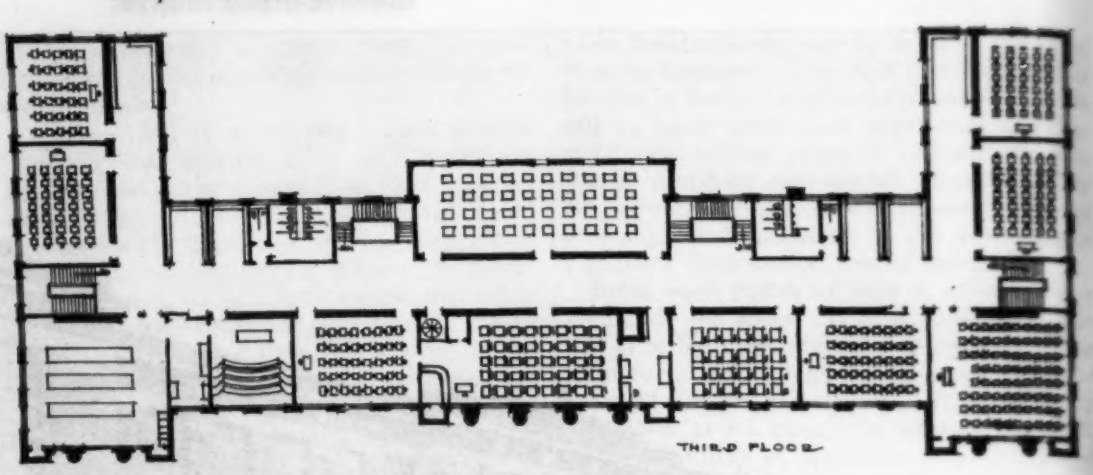
The total appropriation for the building was $250,000, which amount was to include architects' fees, plumbing, heating, lighting fixtures, blackboards, preparation of the site, planting of the grounds, manual training equipment, etc. A further appropriation of $25,000 was made to cover furniture, shades, lockers, science department, etc. The building has been completed within the amount appropriated in both cases. The cost per capita, therefore, for the completed building equipped and furnished is $250.

The following tabulation has been prepared to show the cost of the various parts of the building in actual amounts as well as in terms of the cubic contents. The building contains 1,535,857 cubic feet.

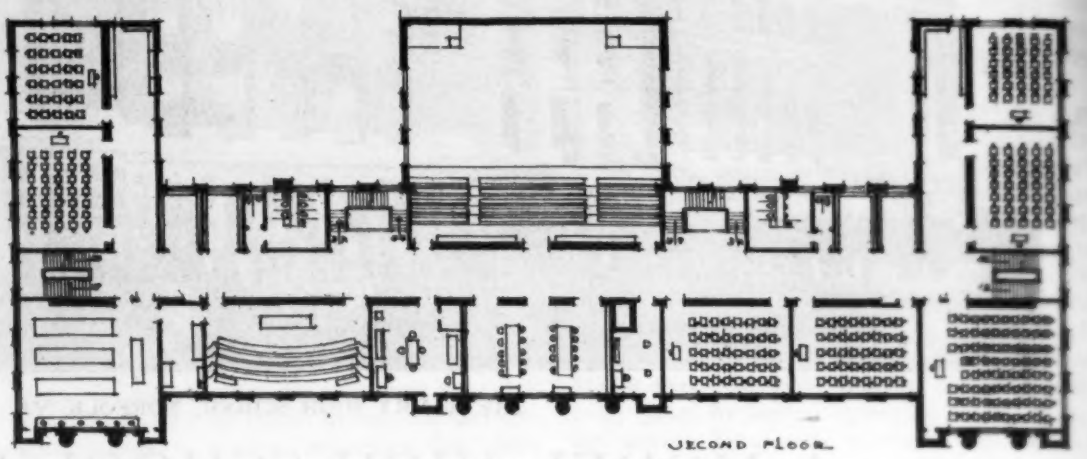
By comparison with the available data as to cost of similar buildings which have been erected recently, it will be noted that these figures are extremely low. In fact this cost data has been most favorably commented upon by a number of authorities who have examined the building and the detailed data of its cost.

Tabulation of Cost, Maury High School, Norfolk, Va.

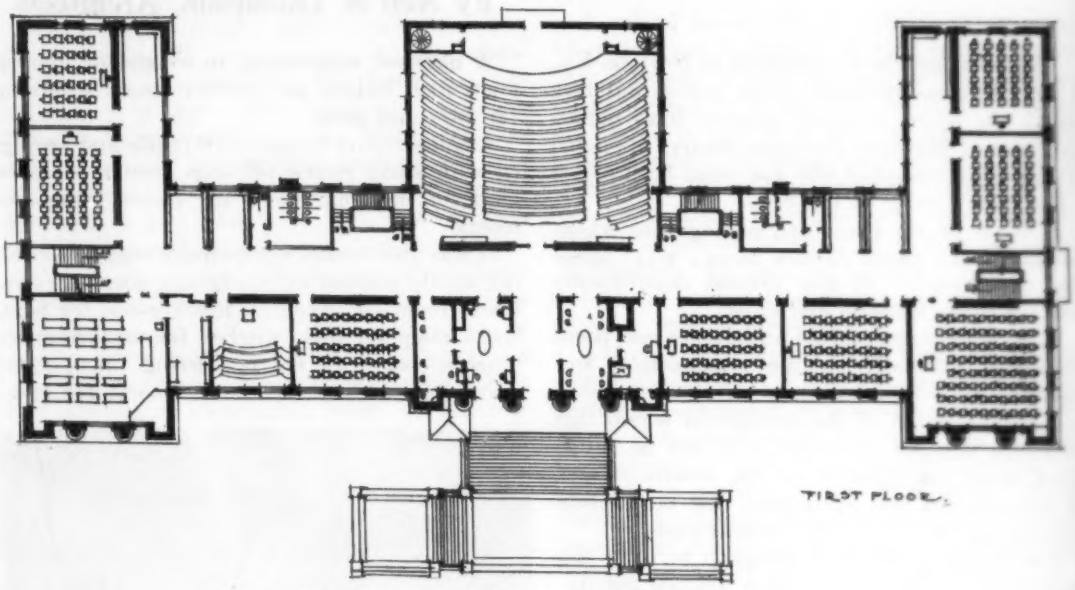
Building Proper—	
Bond, insurance, permit	$ 1,912.24
Excavating	477.00
Concrete footings and basement floor	4,558.00
Reinforced concrete	34,980.00
Brickwork and setting terra cotta	34,649.86
Ornamental terra cotta	27,030.00
Hollow terra cotta tile	6,360.00
Stonework	9,561.20
Ornamental ironwork	3,706.10
Plastering	13,250.00
Carrara glass	4,240.00



THIRD FLOOR PLAN, MAURY HIGH SCHOOL.



SECOND FLOOR PLAN, MAURY HIGH SCHOOL.



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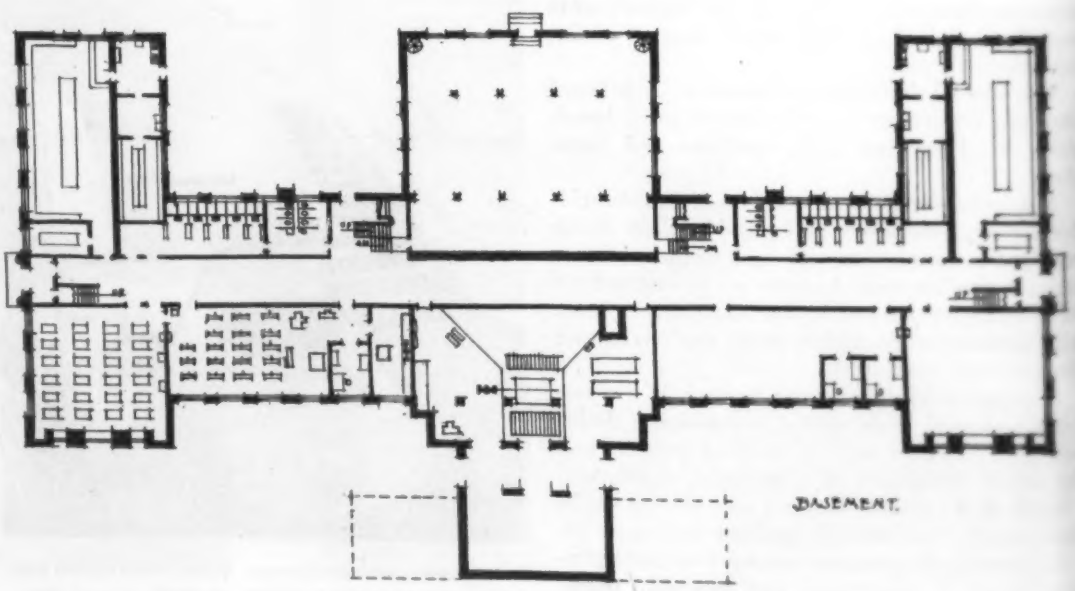

BASEMENT PLAN, MAURY HIGH SCHOOL.

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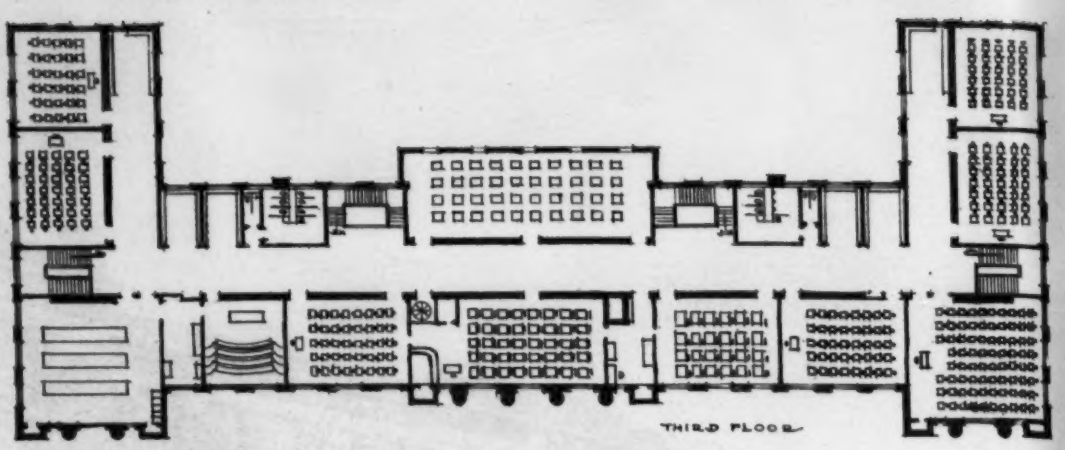
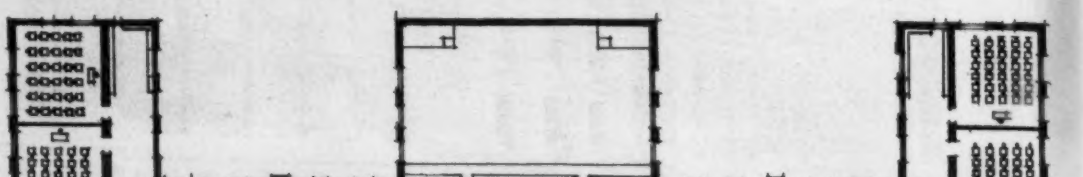
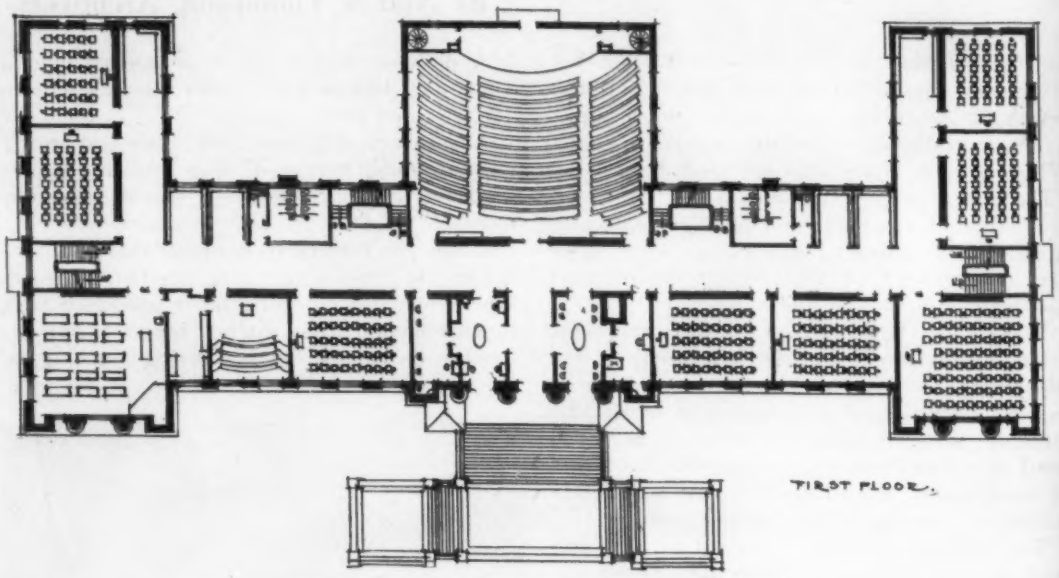


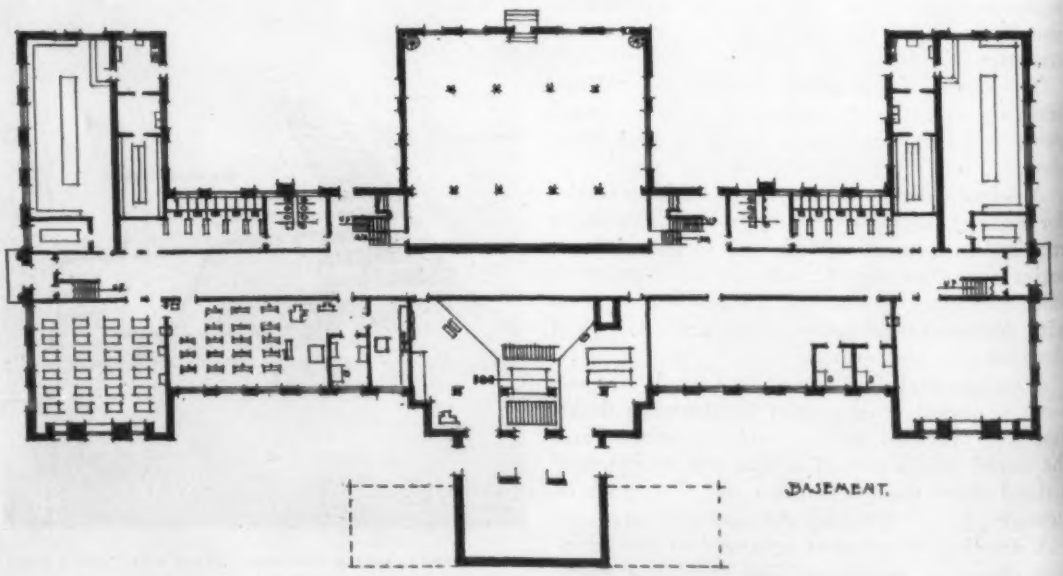
THIRD FLOOR PLAN, MAURY HIGH SCHOOL.



SECOND FLOOR PLAN, MAURY HIGH SCHOOL.



FIRST FLOOR PLAN, MAURY HIGH SCHOOL.



BASEMENT PLAN, MAURY HIGH SCHOOL.

COMMERCIAL DEPARTMENT.

ASSEMBLY HALL.

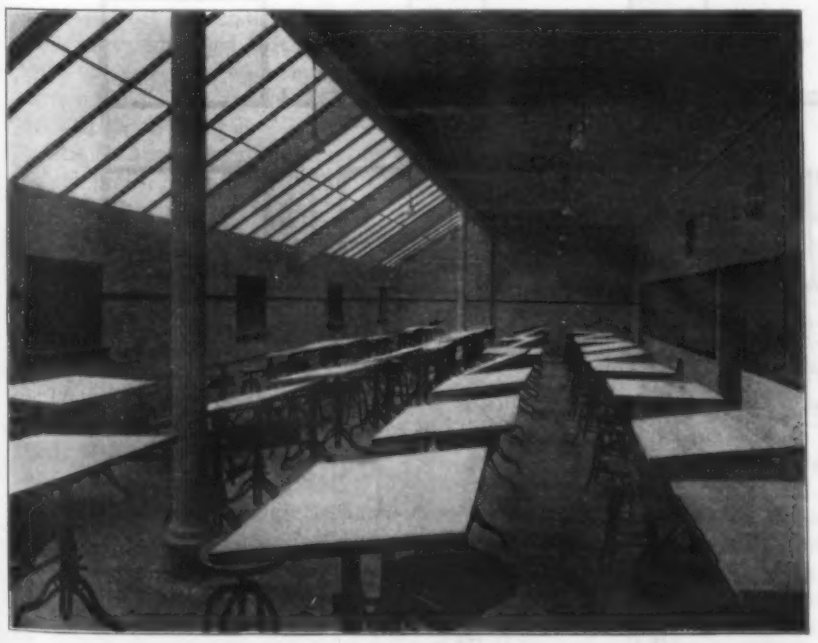
Sash and doors	3,922.00
Metal doors	424.00
Finishing hardware	2,014.00
Lumber	1,060.00
Composition floor and safety treads	12,296.00
Millwork	2,968.00
Roofing and sheet metal	2,120.00
Painting	1,194.62
Carpenter work and labor	6,360.00
Contractor's profit, hauling, rough hardware and incidentals and extras	14,525.84
Total	$187,568.84
Heating and Ventilating—	
Fans, engine and radiation	$ 3,572.20
Boilers and fittings	4,006.80
Temperature control and valves	3,618.84
Galvanized ironwork, copper ventilators and registers	6,890.00
Stack and breeching	572.40
Direct radiation, valves and specialties	394.32
Piping, covering and labor	3,069.76
Tools, insurance and incidentals	902.29
Total	$ 23,026.61
Plumbing	$ 12,508.00
Preparation of Lot and Planting—	
Sidewalks and driveways	$ 1,576.22
Filling	576.38
Grading, planting and black dirt	1,060.52
Trees, shrubs and plants	1,192.50
Total	$ 4,405.62
Vacuum Cleaning System	$ 2,500.00
Furniture and Equipment—	
Pupils, teachers and bookkeeping desks	$ 3,811.97
Auditorium and lecture-room chairs	2,253.56
Metal lockers	3,809.89
Laboratory furniture and equipment	5,382.00
Drawing-room furniture and instruments	1,038.80
Gymnasium apparatus and equipment	1,118.30
Shades and darkening curtains	846.00
Slate blackboards	1,541.24
Built-in furniture, metal shelves	954.00
Sectional bookcases and filing cabinets	682.00
Rolltop and typewriter desks	870.50
Chairs, settees, stools	846.00
Library and other tables	380.00
Miscellaneous items	1,326.62
Total	$ 24,860.88
Electric Work—	
Telephones	$ 827.67
Secondary clocks and program bells	1,979.28
Fire alarm system	344.50
Lighting fixtures	1,956.33
Tungsten lamps	424.00
Conduits for all systems and wiring for lighting	$ 3,523.46
Total	$ 9,054.74
Manual Training Equipment—	
Woodturning shop equipment	$ 4,858.12
Forge shop equipment	2,157.10
Wood bench shop	1,136.56
Machine shop	2,923.53
Total	$ 11,075.31
Total Cost of Building—	
Including all fees, furniture and equipment of all kinds, heating, ventilating and all accessories	$275,000.00

Cost per Cubic Foot.		
Building proper	12.21	cents
Heating and ventilating	1.45	"
Plumbing	.82	"
Preparation of lot and planting	.29	"
Vacuum cleaning system	.16	"
Furniture and equipment	1.62	"
Electric work	.59	"
Manual training equipment	.72	"
Total cost, including all fees, furniture and equipment of all kinds, heating, ventilating and all accessories	17.9	"

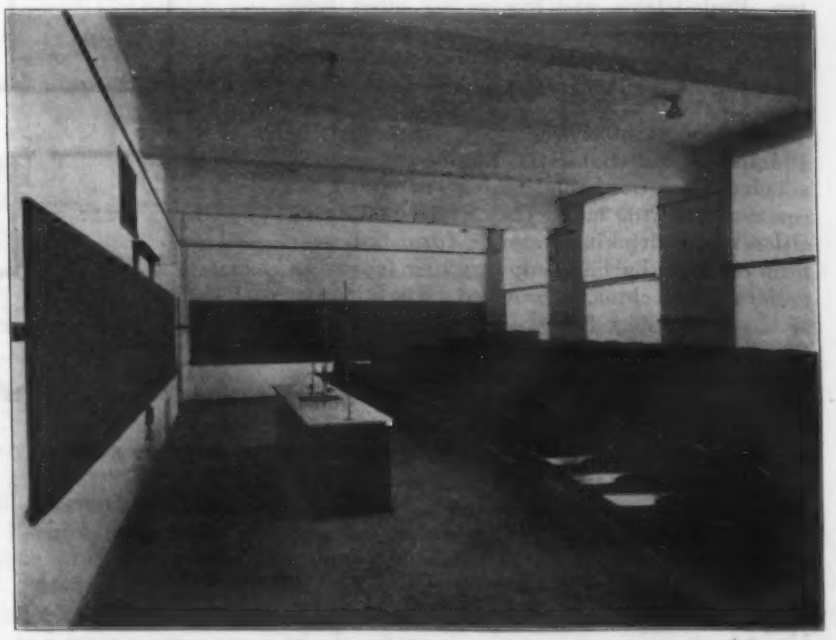
The most important factor which has influenced these results has been that, in preparing the plans and specifications for the building, the proprietary articles have been avoided in the specifications and that the design of the reinforced concrete structure and the heating and ventilating, and in fact all parts of the structure and its equipment, were worked out exactly and in detail with the original plans. When this is done unlimited competition can be obtained and in the present case was obtained.

The contracts were not always awarded to the lowest bidders, but were always awarded in a manner which seemed to be to the best interests of the board of school trustees.

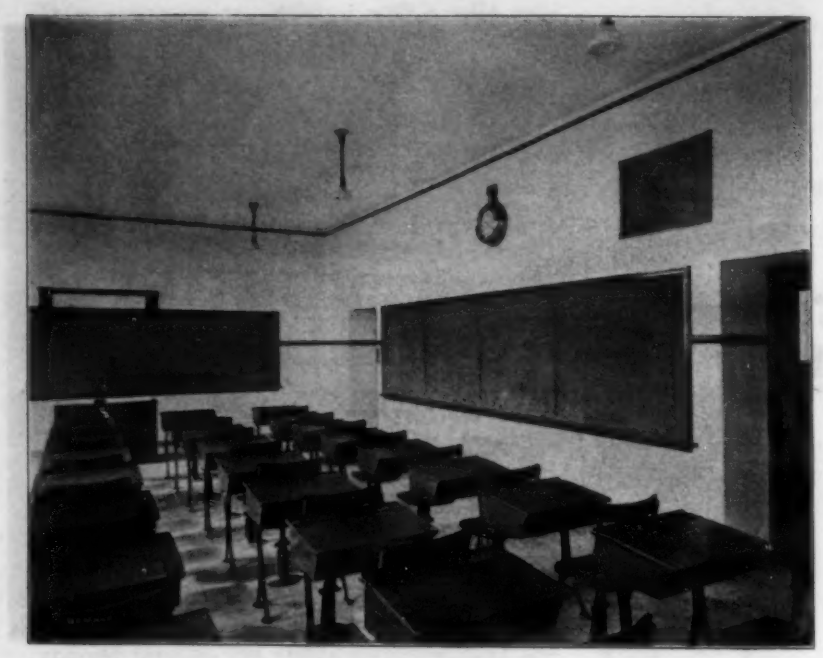
The design of the structure and the engineering features of the structure were carried along hand in hand in the same office and in this way much of the confusion which often results in cases where division of the responsibility occurs, was eliminated.



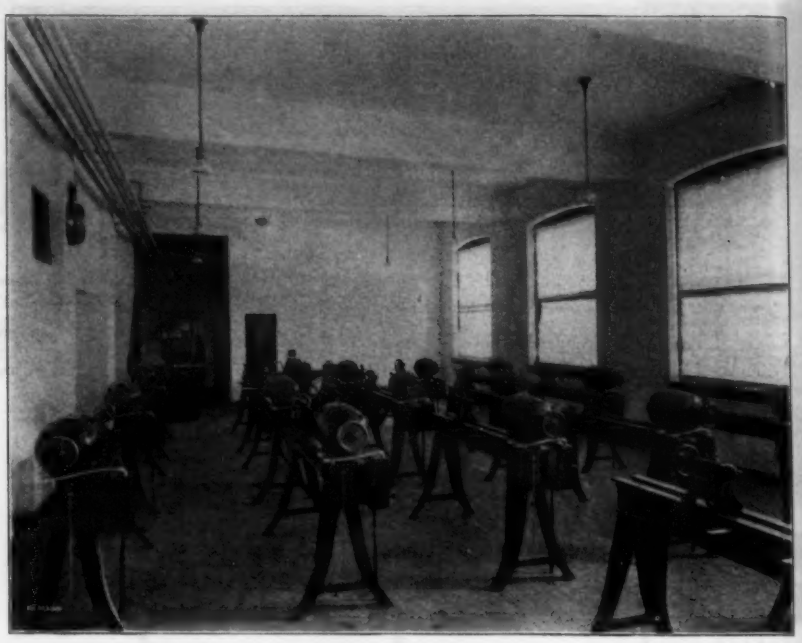
DRAWING ROOM.



LECTURE ROOM OF THE PHYSICAL LABORATORY.



TYPICAL CLASSROOM.



WOOD TURNING SHOP.

Views of the Maury High School, Norfolk, Va.

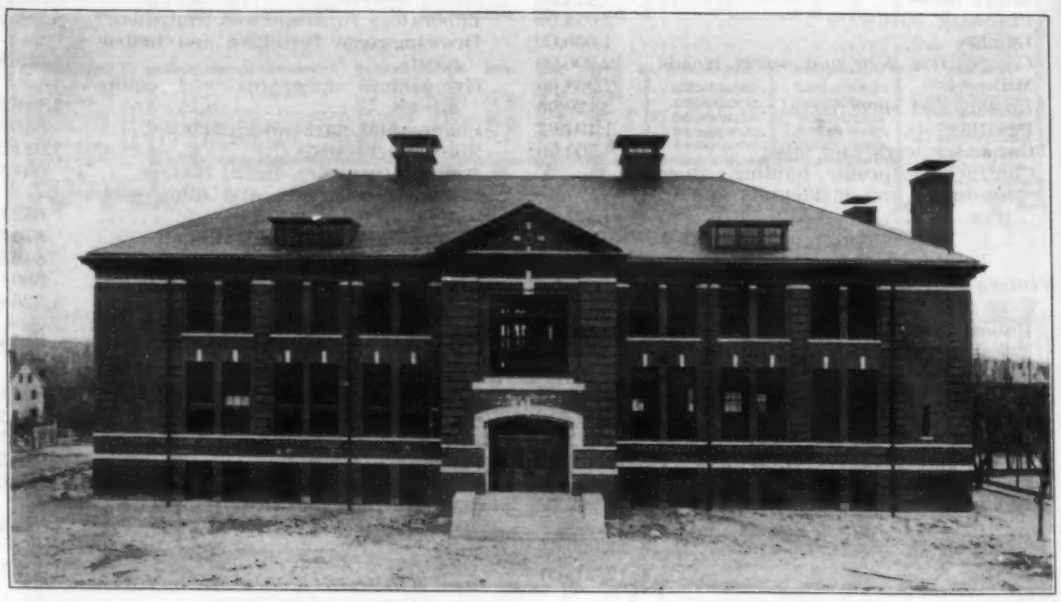
Building Costs.

The board of education of Portland, Ore., has recently issued a public statement to the taxpayers, explaining the cause for the increased cost of conducting the schools. The document treats in detail of the added expense in the form of higher salaries, new studies, etc., but devotes the largest space to a study of building costs for some years back.

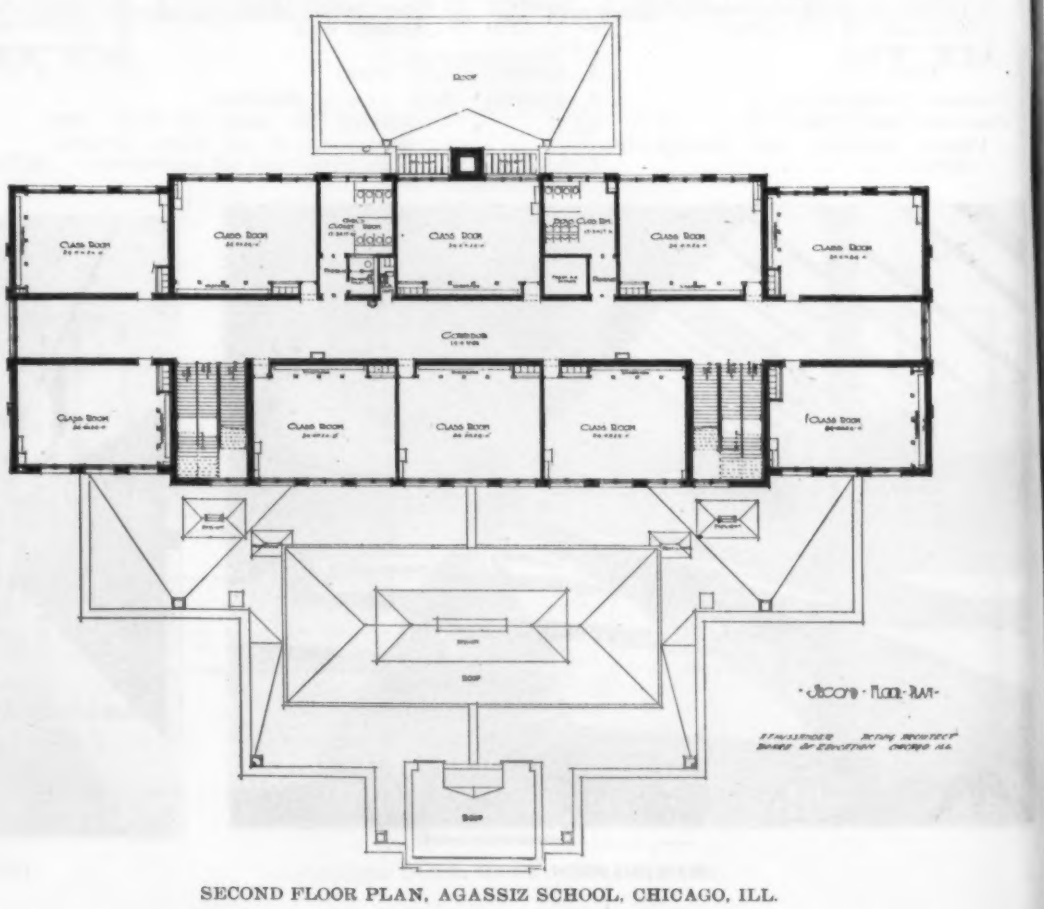
The board prints a table of thirteen school buildings and additions under contract during the year 1910, for which the cost per cubic foot range from 7.2 cents to 11.6 cents, and from $3,258 per class room to $5,481 per class room. The buildings are of brick construction with wooden floors. Of the high schools recently constructed, the Jefferson, while it is not fireproof, cost 9.4 cents per cubic foot or $97.50 per pupil. The Lincoln high school now under construction will cost $453,865, or 20 2-3 cents per cubic foot. This will be a fireproof building. The Washington high school just completed cost $223,872, or at the rate of 14.1 cents per cubic foot. It is not entirely fireproof. Had it been built fireproof throughout it would have cost 18.8 cents per cubic foot.

A comparison of the cost of building schools in Portland with grade schools and high schools in other cities in many sections of the country show that the board is erecting its buildings at a very low cost and is not extravagant in any of its expenditures. In fact, comparisons made with such cities like St. Louis, Cincinnati, Boston, Philadelphia and five or six other large centers of population, show that the board is putting up its schools at a considerable saving over the amounts expended in these cities.

The American Society of Inspectors of Plumbing and Sanitary Engineers recently adopted resolutions condemning the use of the common drinking cup. They urged that in all cities where drinking water is furnished some form of jet or bubbling cup drinking fountains, preferably the china, be provided. The adoption of the resolutions followed an address by Mr. Edward C. Stover of Trenton, N. J. Mr. Stover pointed out the fact that microscopic examinations of drinking glasses has shown that not less than 100,000 bacteria may be present in a square inch of surface. Recent developments in bubbling devices make it possible to prevent absolutely the spread of disease germs owing to the fact that the lips of the drinker touch nothing but the water consumed. The simplicity and low cost of numerous fountain types of sanitary drinking cups makes it highly desirable that the old fashioned dipper and common glass be removed.



MANUAL TRAINING SCHOOL BUILDING, FITCHBURG, MASS.



SECOND FLOOR PLAN, AGASSIZ SCHOOL, CHICAGO, ILL.

NEW CHICAGO ELEMENTARY SCHOOL.

On pages 8-9 of this issue we print the plans and perspective of a unique type of building, designed by Mr. A. F. Hussander for the Chicago board of education. The building, five duplicates of which are to be erected, has been designed with special regard for economy in first cost and in maintenance, and a wide latitude of usefulness.

The school will contain twenty-four standard class rooms, a manual training room, kindergarten, domestic science room and assembly hall and will be fireproof throughout.

The main feature of the building is the ground floor assembly hall and gymnasium, which may be divided so that one-half can be used for assembly purposes, while the other is used as a gymnasium. When necessary the entire room can be used as one large hall, with a seating capacity of 1,000. The exits are so arranged that the hall can readily be used for evening lectures without opening the schoolhouse proper.

Another important feature of the building is the limiting of the height to three stories without any basement. The first floor is kept well above the surrounding ground and special precautions are taken to make the floors dampproof.

The stair capacity is about 50 per cent wider than is required by the Chicago city ordinances. The stairways from the second floor lead directly down, without a turn, with the exits straight out from the stairs. The exits are 25 per cent larger than the width of the stairs; in addition, more available doors make the total exit capacity nearly double that of the stairways, thus ensuring against danger of jamming in a panic. The ample stairway and exit facilities and the fireproof construction of the building, together with the location of the boiler and coal rooms outside of the main walls of the building, will, it is believed, tend to remove altogether the dangers from fire or panic.

The buildings will be faced either east or west wherever possible, so that all classrooms will have east or west exposures and will at some time of the day be flooded with sunlight.

The kindergarten is placed in the first story with southeast or southwest exposure. It is close by an exit and has connected with it a separate toilet room so that the little tots will be entirely separate from the older pupils.

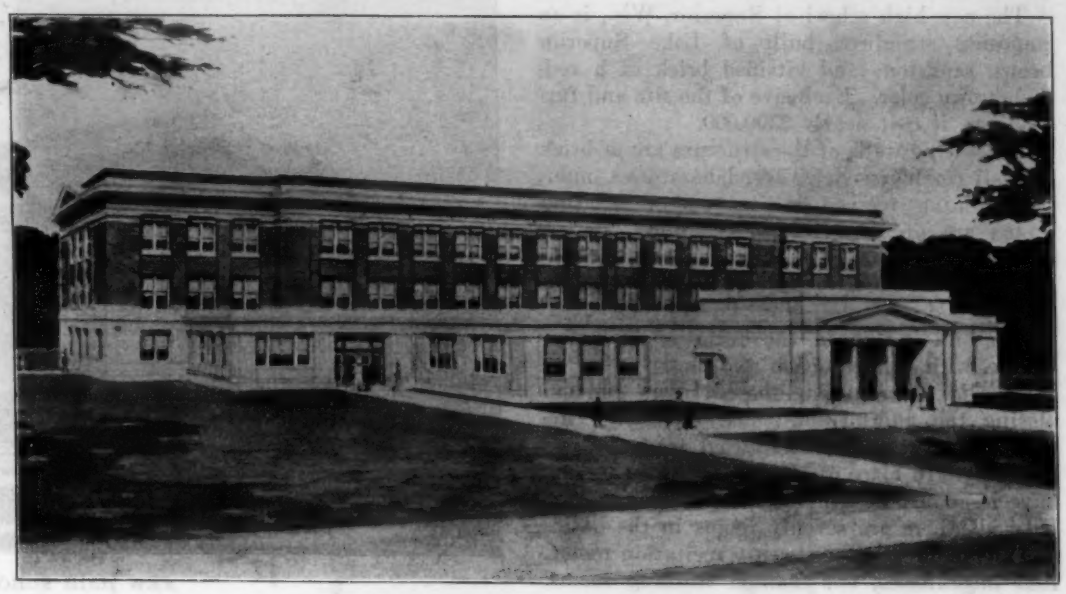
The household arts room is placed on the third floor, to the rear of the building, so as to get away from the dust and dirt of the street.

The class rooms are each 24x34 feet in size and will seat a maximum of forty-eight pupils. They are equipped with sanitary wardrobes, built into a rear or side wall. The window area of the class rooms is approximately one-fifth of the floor area.

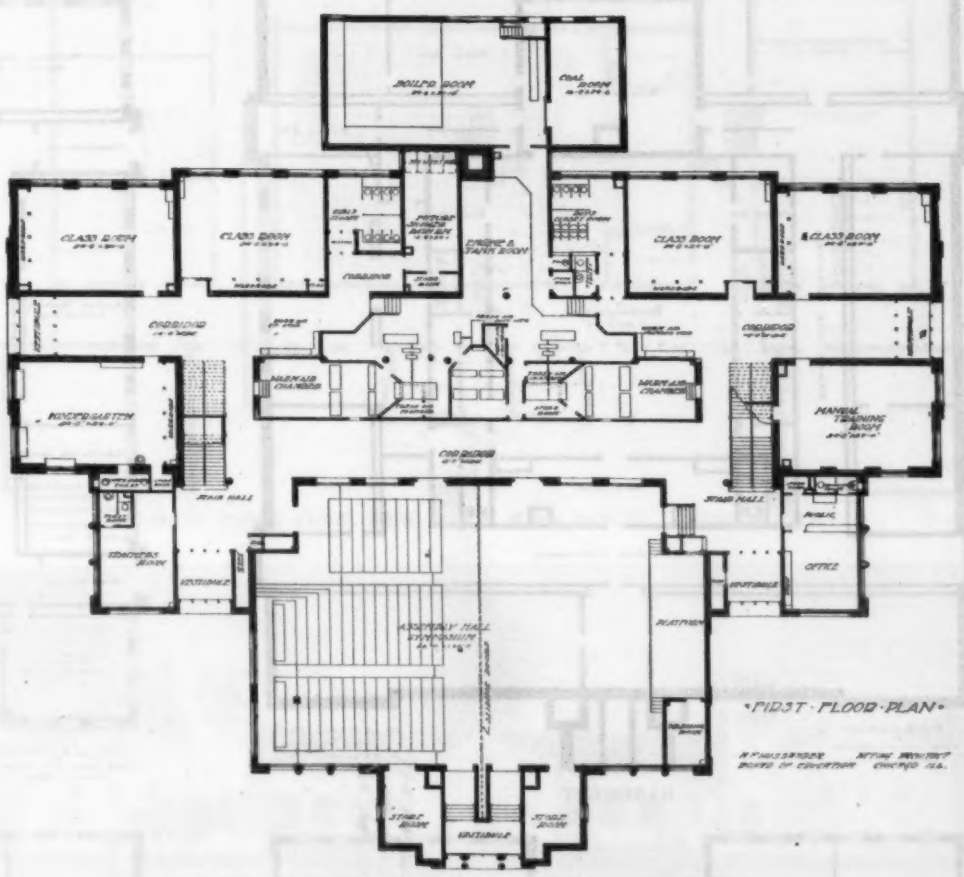
The heating system consists of a mechanical steam plant, with direct auxiliary radiation in each class room.

The sanitary equipment consists of separate toilet rooms for boys and girls arranged in stacks, so that each floor has its own toilets. The fixtures are of the latest pattern and are placed with service corridors between for holding pipes and tanks.

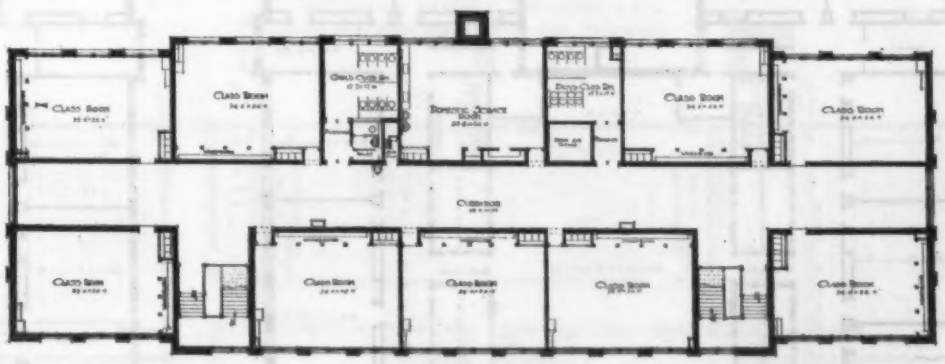
The contracts for the Agassiz school recently awarded amount, in round numbers, to $150,000. This will make the cost per class room $6,200, and the rate per pupil, $124.



NEW AGASSIZ SCHOOL, CHICAGO, ILL.
Mr. A. F. Hussander, Architect.



FIRST FLOOR PLAN, NEW AGASSIZ SCHOOL, CHICAGO, ILL.



THIRD FLOOR PLAN, NEW AGASSIZ SCHOOL, CHICAGO, ILL.

Group High Schools.

The state of California, with characteristic originality, has, during the past year or two, developed a type of high school plant which is to be found nowhere else in the United States. In brief, the idea is an adaptation of the university group plan to secondary schools. The schools consist of three, four and five buildings placed on one large site, and connected with cloisters or enclosed gangways. Built in rough plaster of the old Spanish mission type, the buildings form artistic groups of which any town may be proud. As a rule, the central building contains the administrative offices with the auditorium and gymnasium; another the classrooms and another the manual training departments and the laboratories. For large cities where building sites are excessive in cost and for localities where much inclement weather prevails, the idea is not feasible. It remains to be seen whether the buildings will prove entirely practical in the test of extended experience. It must be shown that they are as cheap in maintenance, as flexible in expansion, and as convenient in administration as one building school before they will find general favor.

NEW HIGH SCHOOL, SUPERIOR, WIS.

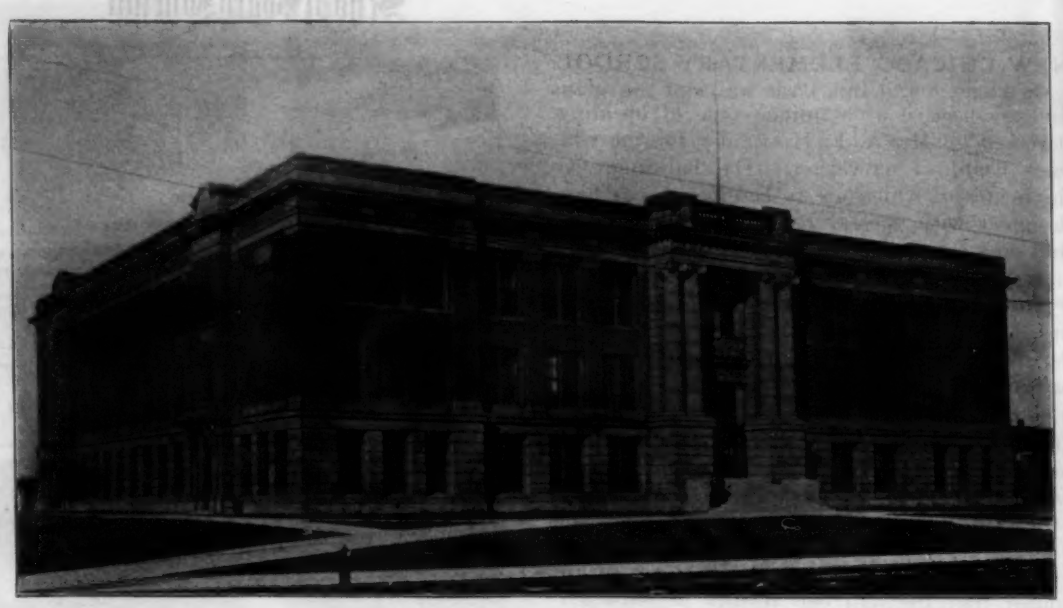
The new high school at Superior, Wis., is an imposing structure, built of Lake Superior brown sandstone and vitrified brick of a reddish-brown color. Exclusive of the site and furnishings, it cost nearly $300,000.

All bearing walls of the structure are of brick and all corridors, stairways, laboratories, manual training rooms, heating and ventilating rooms are of fireproof construction. As an added precaution, laboratories and heating rooms are provided with fireproof doors, which, when closed, entirely isolate these rooms.

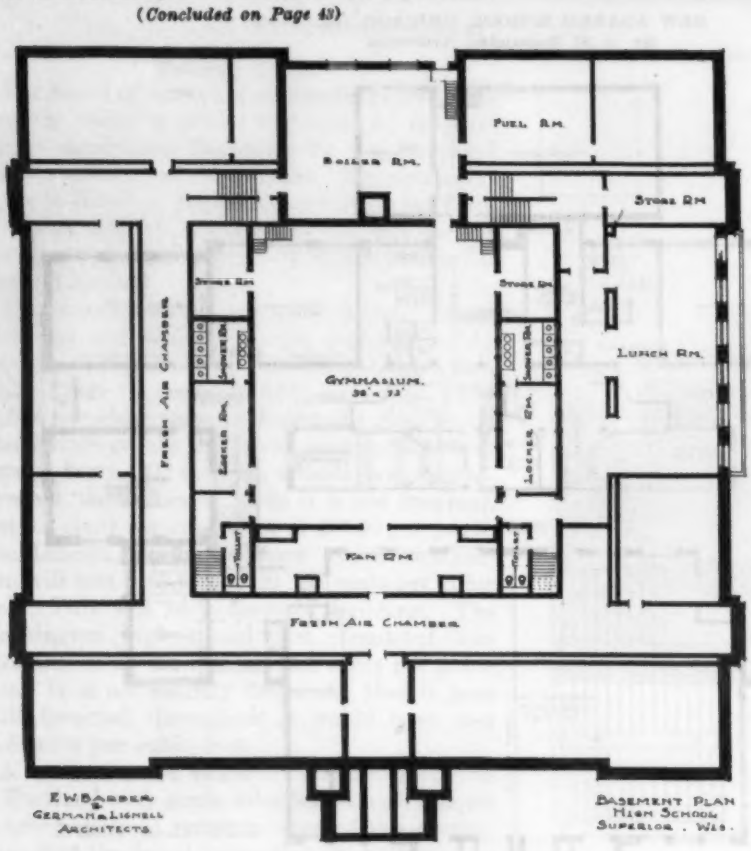
The building is in the form of a hollow square, with the recitation and study rooms on three sides, surrounding the corridors and enclosing the auditorium. The rooms are arranged so that light is admitted from the left side only. In place of cloak rooms steel lockers have been installed in the corridors.

In all, there are seventy rooms in the building, of which there are twenty recitation rooms, four laboratories, two manual training rooms,

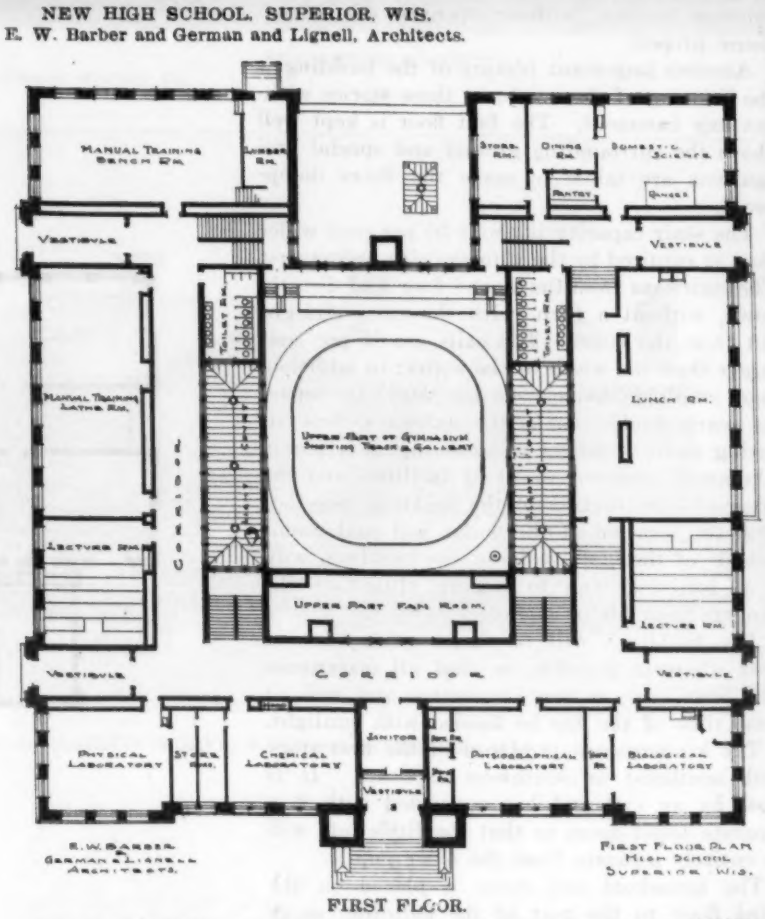
(*Concluded on Page 43*)



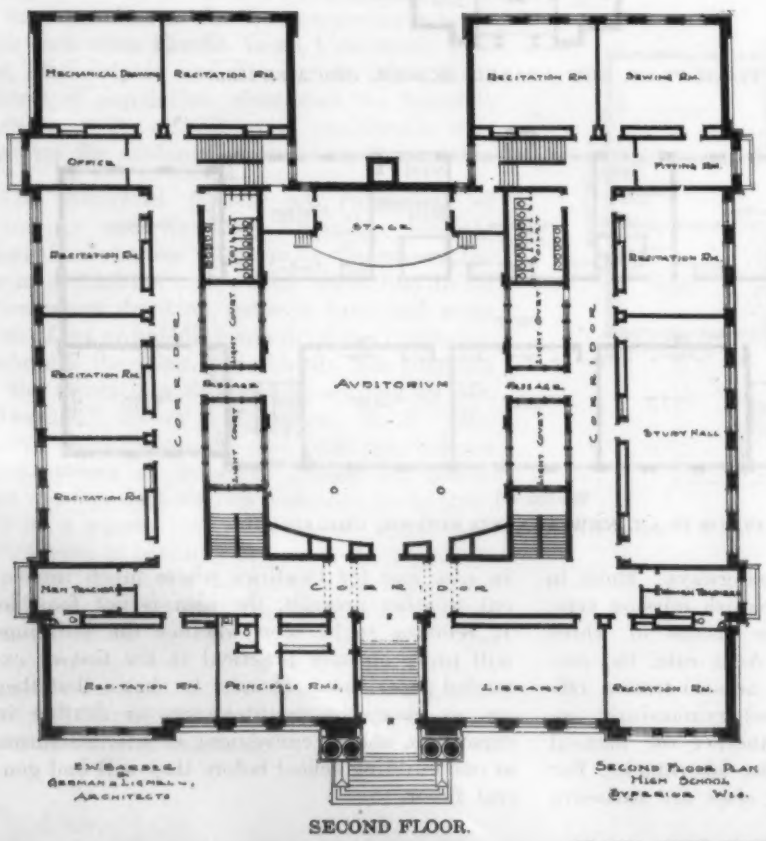
NEW HIGH SCHOOL, SUPERIOR, WIS.
E. W. Barber and German and Lignell, Architects.



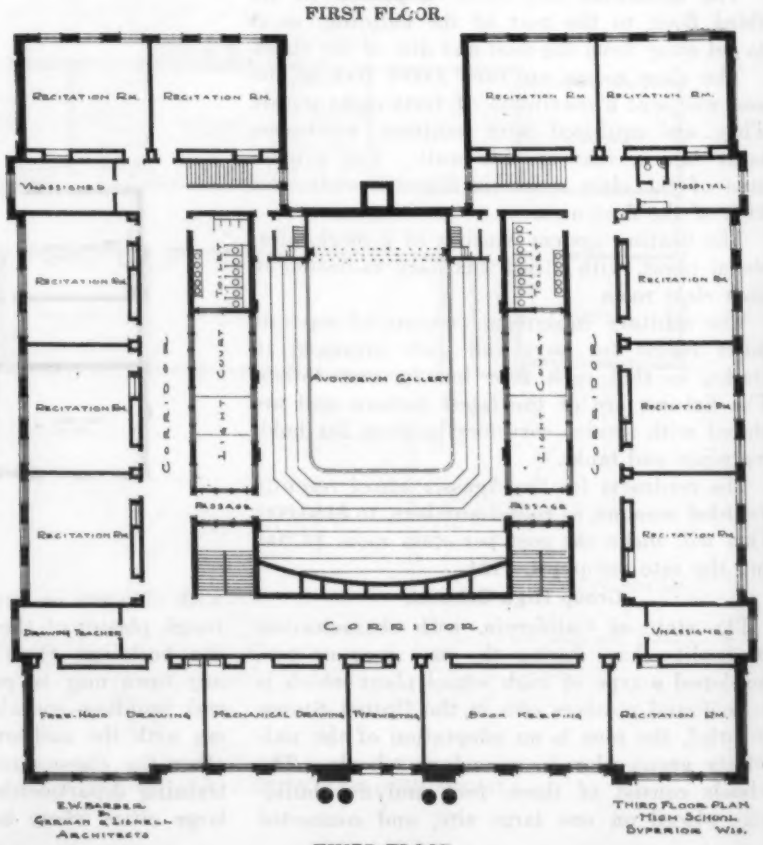
BASEMENT.



FIRST FLOOR.



SECOND FLOOR.



THIRD FLOOR.

PLANS, NEW HIGH SCHOOL, SUPERIOR, WIS.

TWO MISSION SCHOOLS.

The recently completed schools at Orland and Lincoln, California, are more or less original in plan and construction, and at the same time adaptable to any locality where a large level lot is available. Both of these buildings are located in small but growing towns, and the planning is such that additional units or rooms and corridor may be added to them at a later date without disturbing the harmony of the scheme.

Briefly speaking, the building at Orland is constructed of reinforced concrete, with roof of metal tile. It is practically fireproof, there being nothing to burn that could be ignited; metal lath and plaster are used throughout.

The school at Lincoln is built of hollow tile or terra cotta blocks, 9 inches in thickness. The construction will make a very desirable building in winter or summer on account of the confined air spaces, as well as being absolutely fireproof. The roof is of terra cotta tile which is well adapted to complete the architectural requirements and is also a very desirable building material.

The heating apparatus of both schools is located in the basement in the center of the building and is of the most modern type, with thermostatic control in each classroom. The cloister arches are fitted in the winter with wire glass storm sash, making a warm building during that season, and with slight modification, one that would be entirely practical in any climate in this country.

The architecture is quiet and restful, in fact most suitable and consistent to the plan. The cost of either of these buildings was about $25,000.00, including intercommunicating telephones and the best of individual plumbing.

The architect of both buildings is Mr. Walter H. Parker, San Francisco.

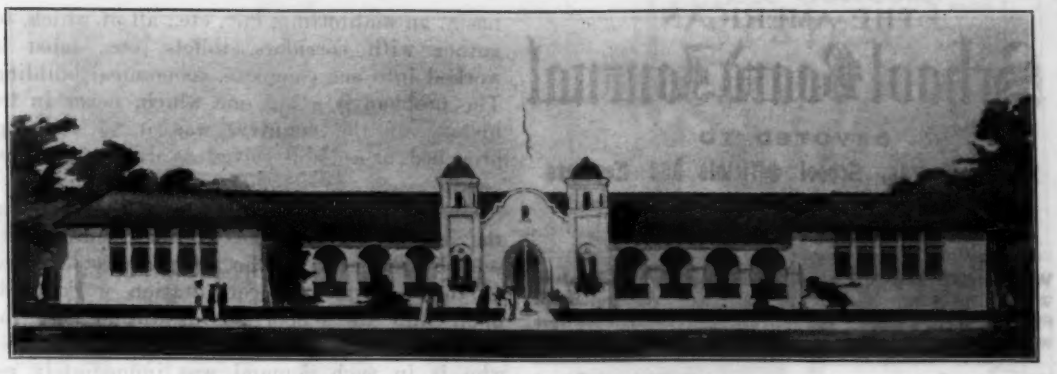
Omaha, Neb. The school board has recently employed John Latenser to design a number of grade school buildings which are shortly to be erected. The schools will be so-called "unit" buildings which can be put up in eight, twelve or sixteen room sections. It is planned, ultimately, to standardize the construction of elementary schools so as to reduce the first cost and the upkeep.

That St. Louis public school buildings have increased in cost from 12.63 cents a cubic foot in 1898 to 19.49 cents in 1910 has been demonstrated by statistics in the recent annual report of Robert Moore, until January president of the board of education. Figures on the relative prices from 1908 to 1910 of 203 manufactured commodities prove the same general trend upward, an average of 12.6 cents in 1908 to 17.6 cents in 1910.

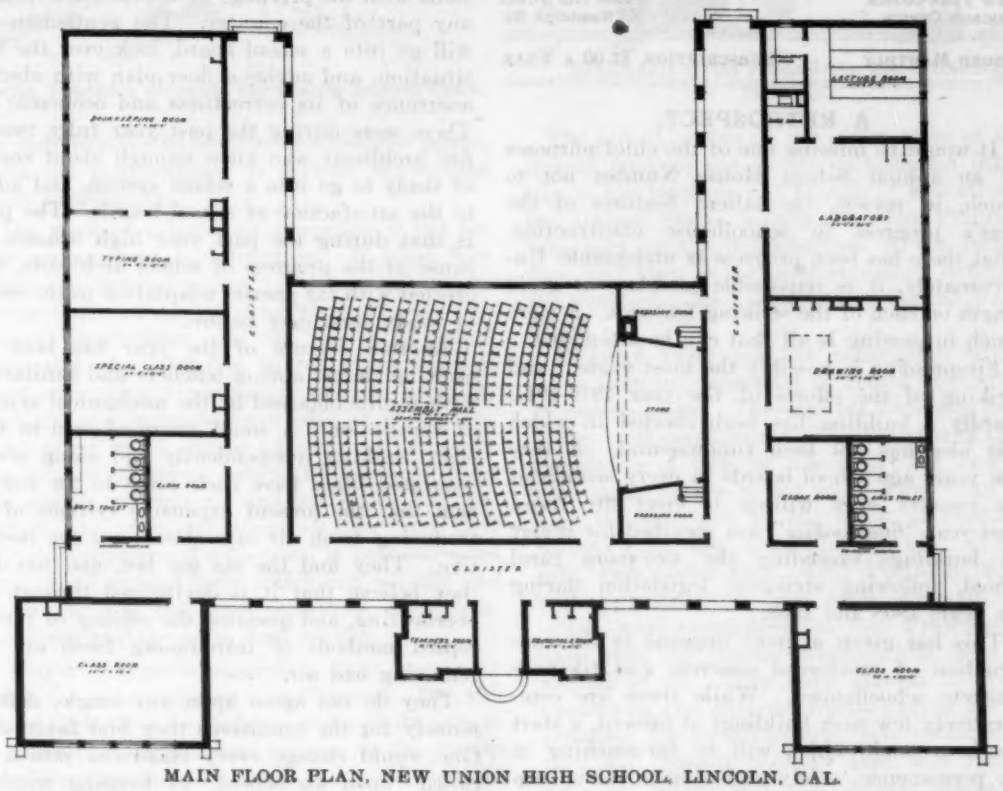
From 1898 to 1910 the Board of Education built thirty-eight school buildings, containing 39,139,848 cubic feet, at a total cost of $6,808,157.05, or an average of 17.39 cents a cubic foot.

Mr. Moore urges the need of radically reconstructing or entirely replacing thirty-six old school buildings in order to bring them up to modern standards of sanitation and safety. During the last thirteen years the board has reconstructed more or less thoroughly, Mr. Moore reports, thirty-five old buildings at a cost of about $1,700,000.

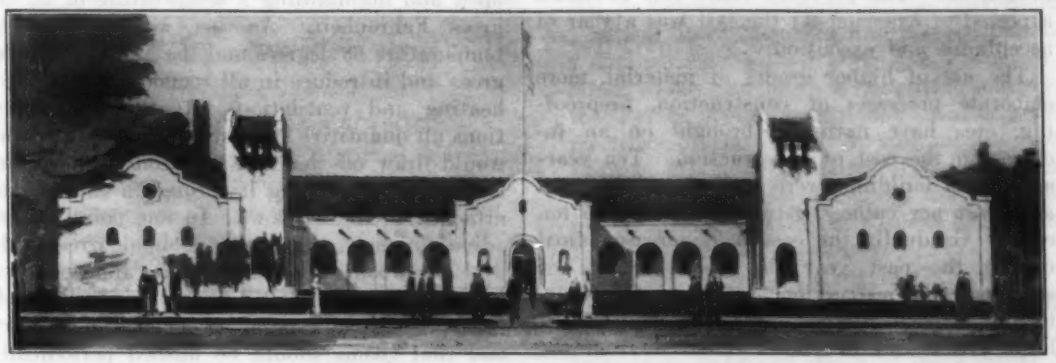
Providence, R. I. A special class for teaching the English language to foreign-born children has been formed in one of the public schools. Nothing but reading, writing and speaking English are taught so that the children who form the class may take their place in the regular schools as quickly as possible. The class is limited to twenty-five children and is conducted by an experienced teacher. Similar classes in other eastern cities have proved a great economy for pupils.



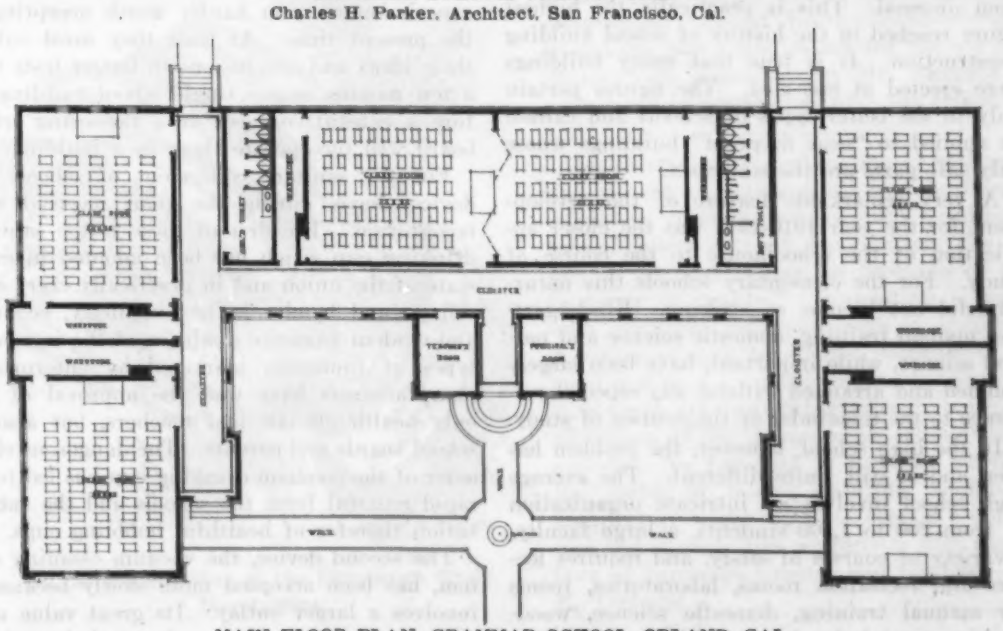
NEW UNION HIGH SCHOOL, LINCOLN, CAL.
Charles H. Parker, Architect, San Francisco, Cal.



MAIN FLOOR PLAN, NEW UNION HIGH SCHOOL, LINCOLN, CAL.



GRAMMAR SCHOOL, ORLAND, CAL.
Charles H. Parker, Architect, San Francisco, Cal.



MAIN FLOOR PLAN, GRAMMAR SCHOOL, ORLAND, CAL.

THE AMERICAN
School Board Journal
DEVOTED TO
School Boards, School Officials and Teachers
Title Registered in the United States Patent Office.

WM. GEO. BRUCE - Editor and Publisher
WM. C. BRUCE - Assistant Editor
FRANK M. BRUCE - Business Manager
W. J. LAKE - Eastern Representative

Milwaukee Office - - 129 Michigan Street
Entered as second class mail matter in the Postoffice at Milwaukee, Wis.
New York Office - - - 3 East 14th Street
Chicago Office - - - - 163 Randolph St.

Issued Monthly - Subscription, $1.00 a Year

A RETROSPECT.

It would be missing one of the chief purposes of an annual School House Number not to touch, in review, the salient features of the year's progress in schoolhouse construction. That there has been progress is undeniable. Unfortunately, it is impossible to dilate at great length on each of the striking features. A mere touch in passing is all that can be attempted.

Fireproofing is possibly the most evident and striking of the efforts of the year 1910-1911. Hardly a building has been erected in which this idea has not been fundamental. A very few years ago school boards in every section of the country were willing to erect fire traps. Last year "fireproofing" was specified for nearly all buildings exceeding the two-room rural school, following stringent legislation during the years 1908 and 1909.

This has given a great impetus to the construction of reinforced concrete and tile-and-concrete schoolhouses. While there are comparatively few such buildings at present, a start has been made which will be far-reaching in the permanence, safety and economical upkeep of schools. The previous years can be called a period of experiment; the last was a year of acceptance and execution.

The use of higher grades of material, more elaborate processes of construction, fireproofing, etc., have naturally brought on an increase in the cost of construction. Ten years ago school buildings were erected and accepted at a cost per cubic foot of about eight to ten cents. Gradually the cost has increased until during the past year the great average of schoolhouse construction approximated fourteen or fifteen cents per cubic foot, while in the large cities and in places removed from the building material market, eighteen cents has not been unusual. This is practically the highest figure reached in the history of school building construction. It is true that many buildings were erected at less cost. The figures pertain only to the better types of schools and cannot be applied to "near fireproof" buildings whose only safe parts are the staircases.

A very remarkable feature of the development for the year 1910-1911 was the closer application of the schoolhouse to the course of study. For the elementary schools this naturally did not become so striking. Kindergartens, manual training, domestic science and natural science, while important, have been largely planned and arranged without any especial reference to the remainder of the courses of study.

In the high school, however, the problem has been and is still, quite different. The average high school involves an intricate organization of from 200 to 1,500 students, a large faculty, a variety of courses of study, and requires lecture and recitation rooms, laboratories, rooms for manual training, domestic science, woodworking, metal forging, machine work, gymnasia, an auditorium, etc., etc., all of which, together with corridors, toilets, etc., must be worked into one complete, economical building. The problem is a big one which, never in the history of the country, was it so well approached or so well solved as during the past year.

One of the notable features of the year was the resignation of one of the leading city school architects of the middle west because of the demands for consultation work made upon him by school boards throughout the country. It is needless to say that an architect who is in such demand was immediately re-elected to continue to draw plans and specifications with the privilege of consultation work in any part of the country. The gentleman now will go into a school board, look over the local situation, and advise a floor plan with absolute assurance of its correctness and economic use. There were during the past year fully twenty-five architects who knew enough about courses of study to go into a school system, and advise to the satisfaction of school boards. The point is that during the past year high schools, because of the progress of school architects, were erected with far greater adaptation to the course of study than ever before.

Another feature of the year has been the growing unrest among teachers and sanitarians with results obtained by the mechanical systems of ventilation. A small group of men in Chicago, working independently and along widely separated lines, have each come to the conclusion that the present expensive systems of introducing fresh air into classrooms are ineffective. They find the air too hot, and too dry; they believe that it is devitalized through the overheating, and question the efficacy of the accepted methods of introducing fresh air and removing bad air.

They do not agree upon any single, definite remedy for the conditions they find fault with. One would change every classroom into a so-called "open air school" by keeping windows open and maintaining a temperature of 52 degrees Fahrenheit. Another would make the temperature 68 degrees and the humidity 70 degrees and introduce in all rooms direct-indirect heating and ventilation. Another still questions all quantitive standards of ventilation and would draw off the foul air from both ceiling and floor, introducing it through a contrivance attached to the windows. In one point all are agreed, namely, that teachers should frequently flush out rooms by opening doors and windows. [illegible] the suggestions that air in schoolrooms should in general be cooler and less dry and that rooms should be flushed periodically with cold, fresh air, the theories of the Chicago experimenters seem hardly worth accepting at the present time. At least they must submit their ideas and conclusions to longer tests than a few months in one single school building before a careful engineer or a far-seeing school board will incorporate them in a building.

For the sanitary equipment of schools two devices have, during the year, received wide recognition. The first of these is the sanitary drinking cup which has been adopted in every state of the union and in practically every city, village and hamlet. The simplicity, economy and evident hygienic qualities of the numerous types of fountains marketed by enterprising manufacturers have won the approval of not only health officials and teachers, but also of school boards and parents. The dangerous character of the common drinking cup has led to its rapid removal from the schools and the substitution therefor of healthful bubbling cups.

The second device, the vacuum cleaning system, has been accepted more slowly because it involves a larger outlay. Its great value as a sanitary agent in reducing dust is being widely recognized by physicians, health officials, sanitary engineers and teachers, and its general introduction is merely a matter of time. As an efficient and economical method it has demonstrated its value in nearly every schoolhouse where it has been tried.

Comment must also be made on the more general application of the classic styles of architecture to the schoolhouses of the past year. Particularly in cities of 25,000 and over have the exteriors of school buildings improved in simplicity, in proportion and in outline. While in such centers like New York and Boston, St. Louis, Philadelphia and Chicago high standards have been set for many years and splendid types, worthy of imitation, have been evolved, the smaller communities have been slow to accept the foreign models. The ridiculous roofs and the useless domes and cupolas are rapidly passing away under the developed taste of architects and the appreciation of school officials.

THE PITTSBURG GRAFT SCANDAL.

The city of Pittsburg, which has been the victim of several ugly graft disclosures, is now facing the most serious and disgraceful scandal which has been uncovered in the history of American school administration. The schools are usually the last governmental branch which politicians and political rings attack, for even a hardened boss will think twice before he levies tribute on the institutions which harbor the children who are to be the future citizens of the state. In the case of Pittsburg, however, it appears from the exposure of the Voters' league the politicians are in complete charge and have for years committed almost every kind of outrage with impunity.

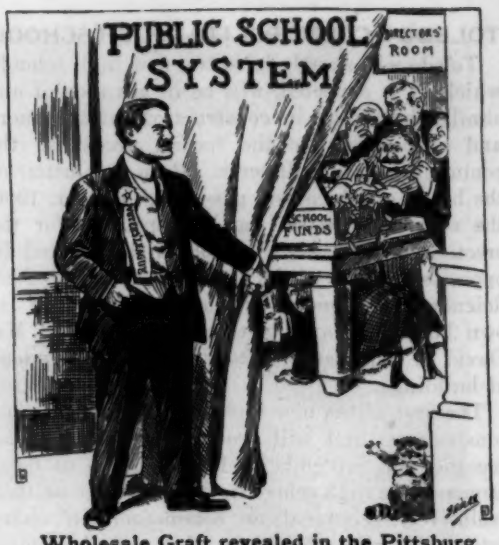
According to the Voters' league the poison which has permeated the Pittsburg councils has crept into the schools. Wholesale graft and corruption have prevailed in the building and furnishing of schoolhouses, and in the purchase of text books and supplies. Teachers, principals and janitors, it is charged, have been levied upon for the positions they were selected to and have been compelled to divide their monthly salaries with the school directors. The character of some of the men and women selected as teachers under such a system may be imagined. Plain stealing of pianos, carpets and other furniture furnished the schools is charged against the school boards of some of the wards. Almost unbelievable are some of the particulars cited in sustantiation of charges that "school picnics," under the control of school directors, became orgies of the most disgraceful character.

A mere glance at the charter provisions under which the Pittsburg schools operate will disclose the reasons for the ruinous conditions cited. The government of the schools is maintained through some forty odd school boards, each consisting of six members who have control of the schools of a single ward. They have nearly absolute powers in the appointment of teachers, the erection of buildings, levying of taxes, etc. The Central Board of Education is made up of some forty members, one from each ward, and controls the selection of books, the management of the high schools and conducts some other minor business details of the school district.

It is inevitable that such an organization should pass into the control of ward politicians and should be dragged into the mire of political trade and barter. Among the local directory of the Pittsburg schools there are thirty-eight men holding political jobs, fourteen saloonkeepers or bartenders, seven men who have no legitimate occupation, being professional gamblers and the like, sixteen contractors and builders, many of whom are engaged in public

San Francisco prepares for the N. E. A.

Pennsylvania Teachers struggle for a New School Code.



Wholesale Graft revealed in the Pittsburg Schools.

school contracts, and nineteen owners of corner groceries. The central board has seven city employes, four contractors, one saloonkeeper and one policeman.

Grafting in school circles is more reprehensible than in any other branch of government. It not only means robbing defenseless children of the money which should be applied to their education so that they may become good citizens of the state, but it holds up before them examples of dishonesty and public corruption that must make every serious-minded man shudder at its possible consequences. The school official above all others must be an example of the strictest integrity and honesty. No matter how able he be or how valuable his services, they are nothing if he be not upright and clean.

The saddest part of the Pittsburg situation is in an announcement of the Voters' league that prosecutions of guilty school directors seems inadvisable because the corruption has gone so far as to clog the machinery of the law and make practically impossible the administration of justice.

If the citizenship of Pittsburg has any self-respect, it will rise and compel its representatives at Harrisburg to do a lasting job of house-cleaning. Every suspected school official should be publicly requested to resign and the entire system of "ward school boards" should be wiped out. The new school code of the state of Pennsylvania will not accomplish the purposes for which it has been formulated if it does not make the graft situation in Pittsburg an impossibility.

THE NEW YORK BOARD.

Mr. James Creelman, the newspaper correspondent, was last fall appointed a member of the New York board of education. After less than six months' service, during which he attended a total of four meetings of the board of education, he has resigned and in a letter to Mayor Gaynor has urged the abolition of the board and the substitution therefore of a paid commissioner of education, to be appointed by the city's chief executive. Mr. Creelman's utterance, based upon little more than a passing glance and betraying complete ignorance of the professional administration and supervision of the schools, has led Mayor Gaynor to renew a suggestion for a small paid commission to be a regular city department rather than an independent agent of the state.

It is a fact which has been acknowledged by nearly all students of the New York school situation that the present board, with its forty odd members is cumbersome and lacking in responsibility and efficiency. Business moves slowly and is left largely to committees of which the respective chairmen are dominant factors. Actual energetic work is done by but a very few individuals who exercise considerable power, while the responsibility is divided among the whole membership.

The work of a board of education is not active management but direction. It must "determine a general policy to be carried out by its professional agents over whom it exercises general supervision and the power of veto." Generally, the initiative in important matters must come from these agents who, by their experience and intimate knowledge of all details, must point out a course of action, must make the courses of study, select the teachers, build the schools, recommend and buy books and materials, etc. General direction over such acts of paid professional schoolmen is best exercised by a small unpaid body which can consult and deliberate with the superintendents, each member contributing to the final results.

Mayor Gaynor's suggestion is a good one in so far as he proposes a small board. But will New York City be ready to make of its schools a municipal department subject to the whims and the dictates of a local political machine? Will it change from the policy of state control of education, which is universal all over the United States, to a system of city direction? We think not.

GO TO SAN FRANCISCO.

The convention of the National Education Association for 1911 will be held in the new San Francisco. In this the association will be fulfilling its acceptance of the invitation extended five years ago before the disastrous earthquake and fire which destroyed the city in 1906.

A cartoonist's idea of the Pittsburgh Graft Revelations.

The school people of the entire state of California have joined in an enthusiastic invitation to the teachers and friends of education in the United States to come to San Francisco, take part in the deliberations of the convention, and then enjoy their summer's outing in the wonderful land of sunshine on the Pacific Coast.

Railroad rates for the convention will be lower than any accorded to recent conventions in eastern cities. Through the energetic labors of the local committee and of the officers of the association a rate of one first-class fare has been made for the round trip. Thus from Chicago the rate will be $62.50; from Omaha or Kansas City, $50; from Denver, $45; El Paso, $40; Salt Lake City, $30; Portland, $26.70, with corresponding rates from other points.

The local committees at San Francisco has done what few similar organizations have been willing to do. They have refused to arrange excursions and entertainments during the time arranged for meetings and have declared that they will permit nothing that will interfere with or subordinate the strictly educational and professional character of the convention.

School board members who may be planning a summer trip should keep San Francisco in mind. They can make a delightful journey to the Pacific Coast and secure in the general meetings of the N. E. A. and in the special sessions of the Department of School Administration an intellectual treat that will be a powerful stimulant in their school board labors.

Acknowledgment.

The splendid paper of Mr. John T. Simpson, on "Concrete Schoolhouses vs. Fire Traps," printed in February issues of the Journal, was originally presented before the National Association of Cement Users. Acknowledgment is also due this organization for the use of the illustrations presented by Mr. Simpson and reproduced in connection with the article.

Architecture is a combination of both science and art and as distinguished from building, exists when there is infused into building this subtle, elusive element, imagination. The architect is one who "solves his problems of utility in terms of beauty." Inundating a building with ornament does not make it architecture. A structure may be all but destitute of ornament and be a masterpiece. As in music there is as much art in knowing when to restrain the vibrations of the strings as in calling forth the melody. No true art is possible, whether in the realm of music, painting, sculpture or architecture which does not express a dominant idea and express it in conformity with the broad laws of harmony, balance and rhythm.—Victor E. Thebaud.

TOLEDO'S COSMOPOLITAN HIGH SCHOOL.

Toledo will shortly have two new high schools, which, it is expected, will be in advance of any similar buildings in construction, arrangement and adaptability to the special needs of the community they will serve. By a resolution of the board of education, passed in October, 1908, the sum of $500,000 was appropriated for the erection of two high schools to be located in opposite sections of the city. On grounds of efficiency and economy the board established its own bureau of architecture and employed Mr. David L. Stine as architect and superintendent of buildings.

The first of the new high schools is now under construction and will probably be ready to be occupied in September. It is in fact to be a cosmopolitan high school in that it will be neither exclusively technical or commercial in character. It will offer three lines of academic, manual and commercial training, placing equal emphasis upon each. It is believed that such cosmopolitan schools tend toward democracy in education, whereas specialized schools tend toward aristocracy and false notions of the value of other lines of school work. Pupils attending schools exclusively academic in character not uncommonly look down upon those who are preparing for manual or commercial pursuits. On the other hand, the high school offering all the courses exemplifies the complex life of the community in which it exists, and prepares for responsible participation in that life.

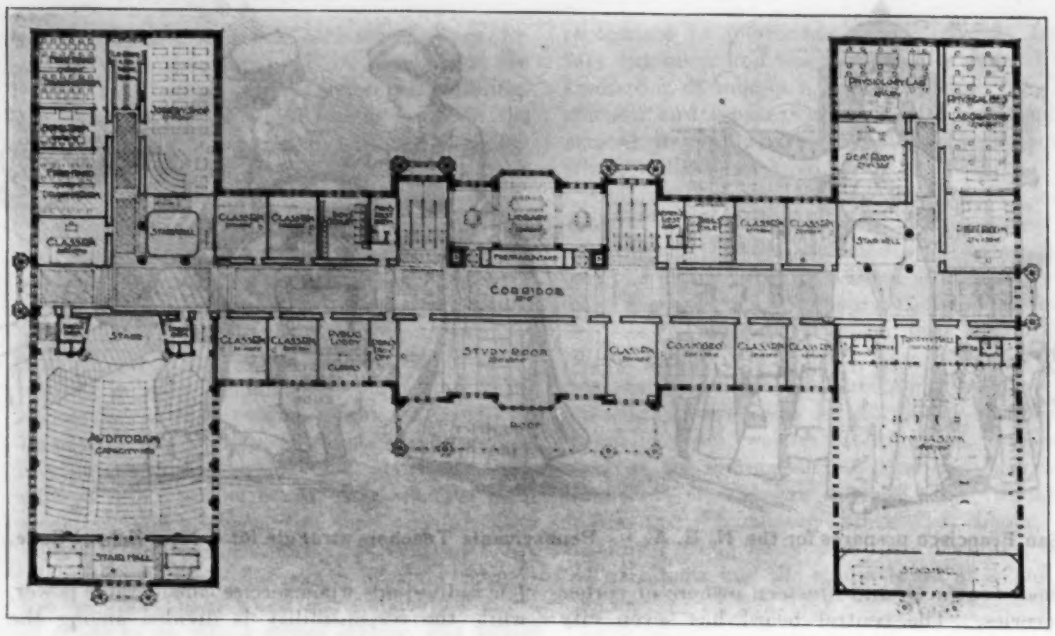
The design of the building is a modified English Gothic, executed in dark, reddish-brown tapestry brick, with terra cotta trimmings and a roof of green tile. The frame of the structure is reinforced concrete and the building will be entirely fireproof.

The plan is like the letter "I" in form, the entire frontage being 380 feet, and each of the two wings having a depth of 210 feet. The central portion of the structure will be devoted mainly to academic work, while all of the laboratories and most of the manual training rooms will be located in the wings.

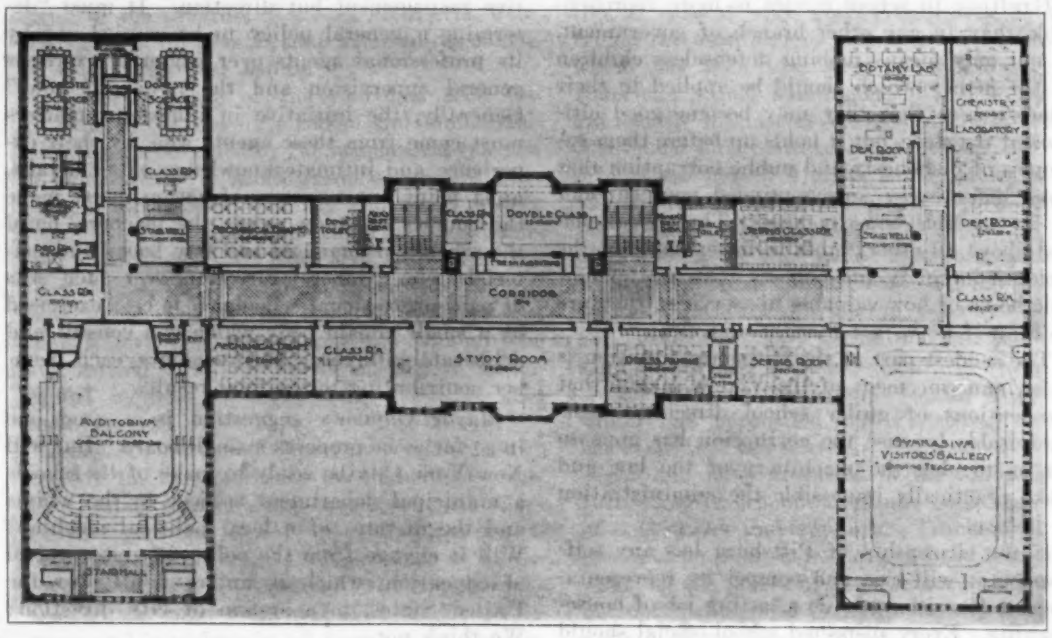
The building is practically three stories high, all above the grade line (the ground floor being eighteen inches above grade level). The center section is carried up above the top floor and flanked by towers on either side. The room thus obtained will be used for a refectory, with a large kitchen adjoining. Here lunches will be served to students at cost by a caterer employed by the board. There is no basement except the necessary excavation for the installation of the heating and ventilating plant, and for a mechanical laboratory. The building will be heated by steam, with an indirect fan system which requires the movement of 160,000 cubic feet of air per minute. The temperature will be automatically controlled by a system of thermostats located in each room, thereby maintaining a uniform temperature and securing thorough ventilation at all times.

The auditorium will be located in the left wing of the first floor, and will have a total seating capacity of 1,150 (850 seats on the ground floor and 300 in the balcony). Since the auditorium is to be available for evening lectures and general culture purposes, it has been designed with independent entrances so that it may be used without throwing open the remainder of the building.

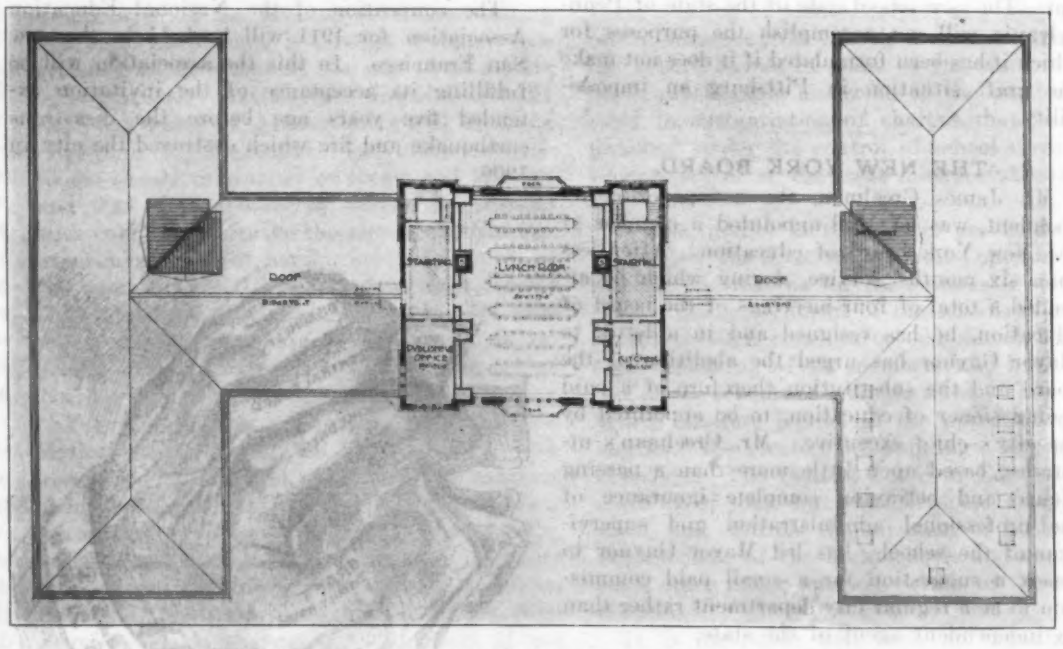
In the opposite wing is the gymnasium, 69x100 feet in size. On the ground floor will be the locker rooms, baths, natatorium, with pool 25x47 feet, and a room for visiting athletic teams. On the first floor above is the main gymnasium room, 69x72 feet clear, the remainder of the space being devoted to the instructor's office, examining rooms and trophy hall. Above the main gymnasium floor a visitors' gallery will extend around the entire room, with a running track suspended overhead.



FIRST FLOOR PLAN, COSMOPOLITAN HIGH SCHOOL, TOLEDO, O.



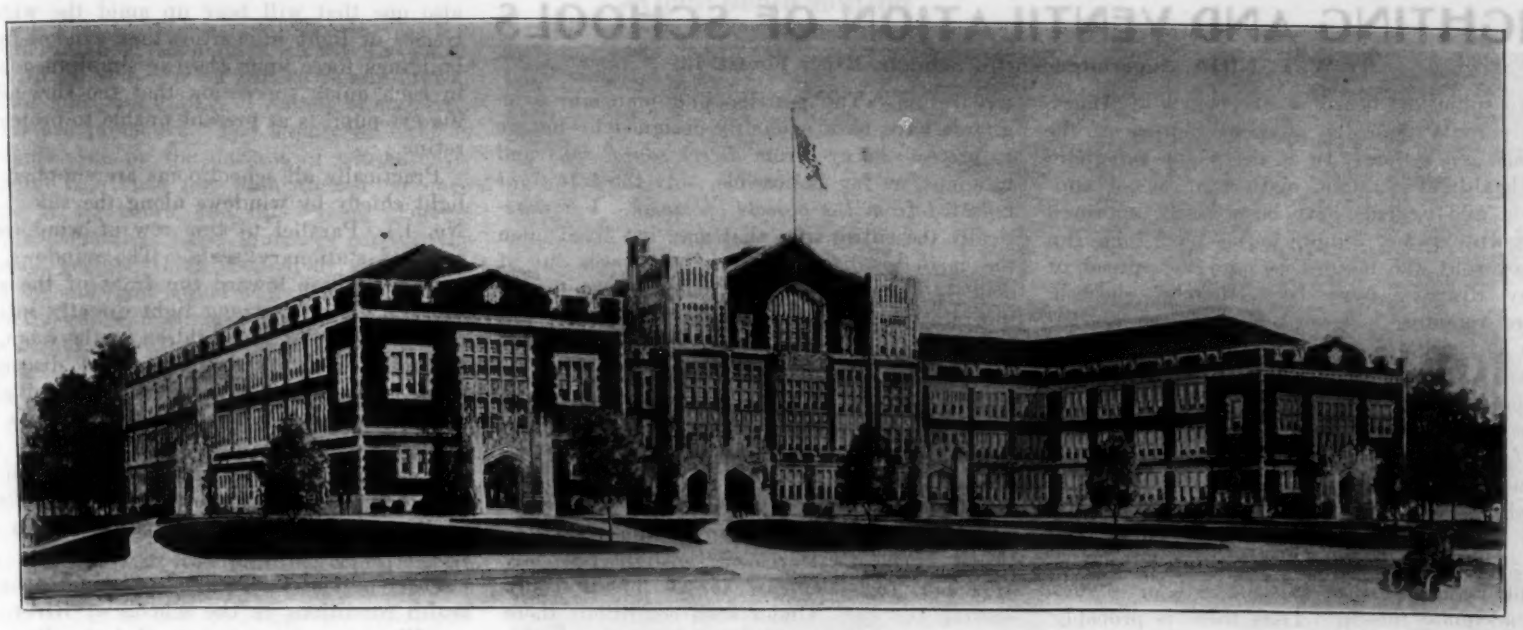
SECOND FLOOR PLAN, COSMOPOLITAN HIGH SCHOOL, TOLEDO, O.



THIRD FLOOR AND ROOF PLAN COSMOPOLITAN HIGH SCHOOL, TOLEDO, O.

The school is designed to accommodate about twelve hundred students. As will be seen from the floor plans, there are to be twenty recitation rooms, most of which are of standard size, 20x24 feet, designed to accommodate classes of thirty. Three of these are on the ground floor, ten on the first, and seven on the second floor. Students will prepare their lessons in the study rooms, of which there are two, one on the first and one on the second floor, each having a seating capacity of 200.

All six laboratories are located in the gymnasium wing of the building, two on each floor. Three of the laboratories are 28x39 feet each,



NEW COSMOPOLITAN HIGH SCHOOL, TOLEDO, O.
David L. Stine, Architect.

with a connecting demonstration room 27x32 feet, while the other three are approximately 27x56 feet, each with a connecting demonstration room 27x30 feet.

The provision for manual training work will be fully equivalent to that offered in many exclusively technical schools. In all there are nineteen manual training rooms and shops. Six of these are on the ground floor—the wood turning shop, forge, foundry, machine shop, applied design room and mill room. All shops will have special locker rooms and lavatories in connection. On the first floor are three rooms for free-hand drawing and design, and the joinery shop. On the second floor are two rooms for mechanical drawing; three for domestic arts (two sewing and one dressmaking), while the domestic science department is provided with two large kitchens, together with a dining room, pantry, bedroom and bath, arranged en suite, and designed to illustrate all features in connection with the care of the home.

Commercial work is to be amply cared for in three rooms—a large bookkeeping room 24x60 feet on the ground floor, together with a double room for stenography and typewriting, 24x45 feet, also on the ground floor; and on the first floor a commercial geography room 24x30 feet. A four-year and a two-year commercial course will be offered, the latter designed especially for students who cannot afford to spend four years at high school, but who desire all the commercial work offered together with the elements of a general education.

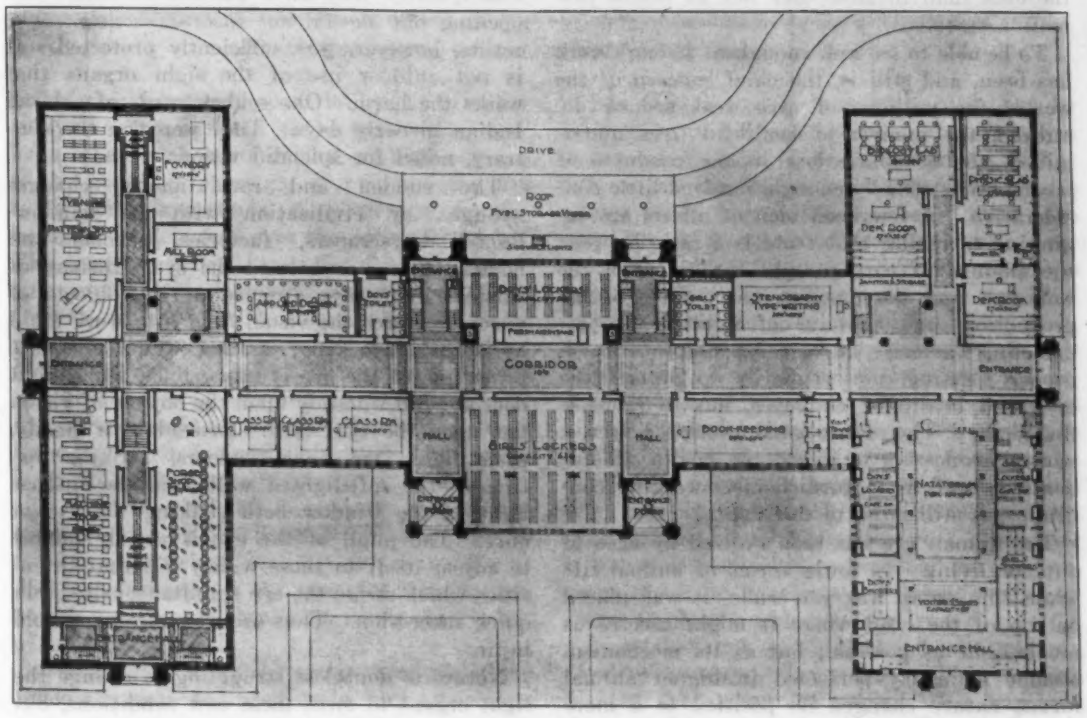
Among the special features of the plans the following are noteworthy:

(1) There is an absence of all interior courts. The building is lighted entirely from the outside. No classrooms are more than 24 feet deep and shops and laboratories do not exceed 28 feet. Thus it will be possible to have good light in every part of each room.

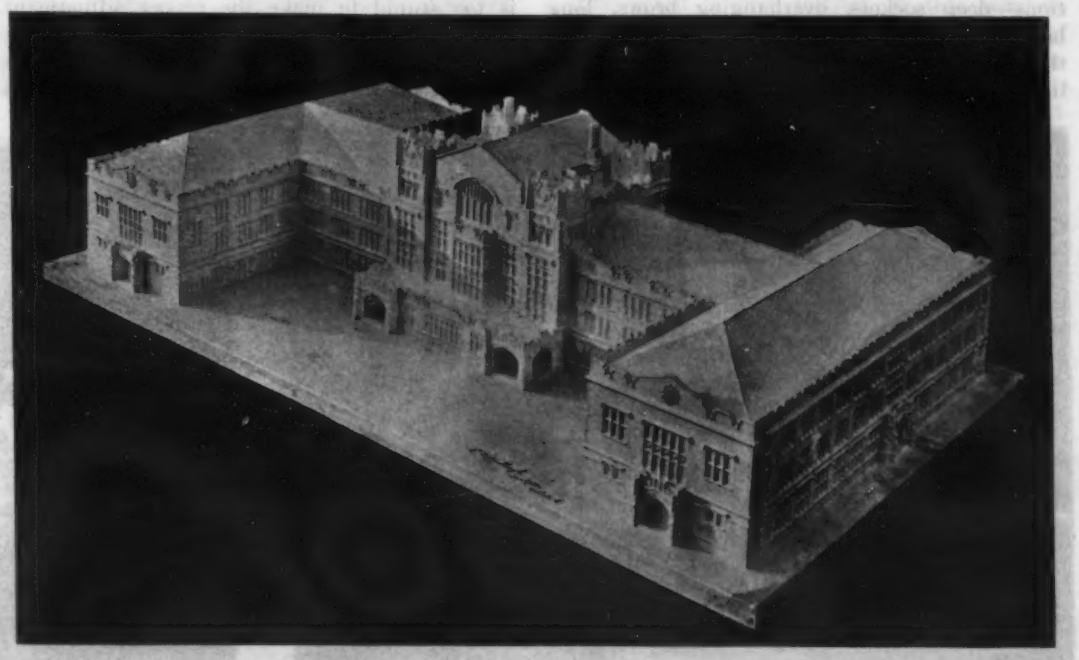
(2) Duplex stairways will be provided, one to be used by pupils going up; the other by those coming down. This will facilitate the passage to and from classrooms and study rooms by avoiding crowding and confusion on the stairways. The stairways are placed advantageously so as to reduce pedestrian travel from one part of the building to another.

(3) The entrances are placed in every case at grade and stairs are inside the building. Entrances are also arranged so that parts of the building may be used at night without interfering with several purposes to which the school may be put.

(4) The storage of hats and wraps will be taken care of in separate locker rooms for boys and girls on the ground floor. Each pupil will have his individual locker to which he alone has the key.



GROUND FLOOR PLAN, COSMOPOLITAN HIGH SCHOOL, TOLEDO, O.



PLASTER MODEL OF THE COSMOPOLITAN HIGH SCHOOL, TOLEDO, O.

Four rest rooms are provided for teachers. These may also be used as emergency rooms when pupils become ill.

LIGHTING AND VENTILATION OF SCHOOLS

By W. L. NIDA, Superintendent of Schools, River Forest, Ill.

No subject is dearer to the hearts of American parents than the physical welfare of the rising generation. In a desire to safeguard the health of children, matters of school sanitation and hygiene have been vastly improved in recent years. Minute germs have been run to cover by the microscope and the spread of many diseases have been thereby checked. There remains, however, much to be desired both as to lighting and ventilation of public schools.

Abundance of research light is being thrown upon all dark corners; but, strange to say, light itself, its proper application to sight, its importance to health through the eyes, is still largely in darkness. Oculists have confined their attention chiefly to the treatment of the eye. They have done almost nothing to awaken the public mind to the existing evils or to suggest adequate reform. Thus there is probably more crude ignorance among laymen today in regard to scientific lighting and proper use of the eyes than in any other line of health promotion.

To be able to see well enough to do one's work has been, and still is, the chief concern of the world; the millions of eyes weakened or destroyed, the number of healthful lives undermined, the economic loss in the products of labor have, strangely enough, received little consideration. A few keen men of affairs are beginning to realize that there is a ratio between the amount of correct light thrown upon the workman and the amount and quality of his production, and captains of industry are remodeling factories at vast expense to furnish proper lighting, not primarily to protect the eyes and health of employes, but to increase dividends. The educational world, however, whose business is to guard the health of students, as well as to furnish ideal working conditions, is still blind to this need.

The human eye has been evolved by ages of outdoor living. In lower forms of animal life while this organ was yet crude, it was placed on top of the head where it might receive as much light as possible; but as its mechanism became delicately perfected in higher animal forms, nature changed its position to a more shielded region upon the side of the head, and hedged it about with many additional protections—deep sockets, overhanging brows, long lashes and lastly, an adjustable dark curtain, the iris, through whose pupil much or little light may be admitted upon the highly sensitive retina. The position and manifold safeguards have been evidently designed by nature to protect the eye from *direct source-rays* and to admit, as far as possible, only the *soft light reflected from the objects of vision*. For practically the entire time that man has lived upon the earth his life and work have been out of doors. The last few centuries during which the race has spent its daylight hours more and more indoors, are but a jot compared with the millenniums that have developed the eye. This organ then was designed for, and evolved through, outdoor use, and civilized man is now doing his work to a remarkably increasing degree indoors. What is the significance of this radical change to the eye?

The outside world is evenly lighted with the source overhead. Moreover, the light is steady with but *few sudden changes of intensity meeting the eye*. Under such conditions there is comparatively little work for the muscles which control the size of the eye-pupil, and consequently they have learned to adjust the opening but *slowly, not instantaneously*. The retina, however, was sufficiently protected. It is not outdoor use of the sight organs that works the harm. One seldom reads of a blind Indian in early days. They were, on the contrary, noted for splendid vision.

The sudden and revolutionary changes wrought by civilization with its window-lighted skyscrapers, factories, schools and homes, have overwhelmed the eye. Instead of vertical light rays directed at the objects of vision we force the visual organs to work amid horizontal rays only, against which adequate protection of the eye is impossible. Such light does not fall squarely upon the objects of vision but upon the eye itself. Instead of a steady, even light, we have, indoors, striking extremes—the soft-lighted walls and the intense light of the window both striking the eye at once. The pupil of the eye is utterly unable to adjust itself to those widely different intensities which strike the eye simultaneously, or in quick succession. Thus are we suffering untold injury.

Nature is doubtless struggling to change the sight organs to meet these new conditions, but she works very slowly, careless of the sacrifice of generations in the process. Perhaps, if man is too stupid to make the proper adjustment, nature may be able, ages hence, to evolve an eye that will endure the strain of constant use amid exclusively horizontal rays; and, perhaps, also one that will bear up amid the wide extremes of light intensities that window-lighted buildings force upon the eye simultaneously or in such quick succession that the slow-adjusting eye-pupil is at present unable to protect the retina.

Practically all schoolrooms are supplied with light chiefly by windows along the side. (Cut No. 1.) Parallel to this row of windows are rows of stationary seats. The windows, and especially those toward the front of the room, throw a glare of strong light directly into the faces of many of the children in the room, and from this constant irritation and discomfort there is no escape. Moreover, we must either overwhelm those sitting near the windows with superabundance or supply those on the dark side an insufficiency. Amid these conditions is it to be wondered at that headaches, inflamed eyes, and spectacles are prevalent in our schools?

The report of the medical examiner upon the health conditions in the schools of River Forest, Ill., two years ago, startled the Board of Education. He told them that of all their pupils needing medical attention fifty-three per cent were suffering from troubles of the eye. This enlightened and progressive Board set about to improve the lighting in the Central school and to provide better conditions in the proposed Elm Street school. Convinced that top lighting was the only scientific solution of the problem, the Board resolved upon a one-story skylighted building. In the absence of precedents they determined to blaze the way. The result is a fine, skylighted building—a distinct advance in sanitary school architecture. (Cut No. 2.)

This four-room one-story wing of a future central building, modern in every respect, was completed in November, 1910, at a cost of $19,000. While patterned mainly after sanitary requirements, artistic effects were not wholly overlooked. This structure of dark red pressed brick with trimmings of Bedford stone is simple, dignified and pleasing. The saw-tooth skylights were used, in order that the sunlight might never interfere. These are parallel ridges running east and west, the south slope of which has the usual opaque roofing, while the north slope is of reinforced glass. (Cut No. 3.) The glass is set at such an angle that direct sun rays never strike it even in summer. (See Cuts No. 3 and No. 4.) The dead air space between the skylights and the ceiling glass in the class rooms is adequate protection against the cold of winter and the heat of summer.

Illustration No. 4 is a dream realized in full.

1. Common type of window-lighted class-room. Poor distribution and wrong direction of light.

5. Wide, short class-room with windows on end only. Even distribution of light secured by prism glass.

The picture was taken on a cloudy December day with all side window shades closely drawn. Teacher and pupils all, not merely a majority, but all are protected. The supply of light is abundant even on the darkest of winter days. Artificial light has not been turned on once during school hours, and this saving alone is not inconsiderable. The source is correct, the diffusion perfect, being secured by ribbed ceiling glass and light-tinted walls, and the quality is restful and non-exhausting. The light falls, as it should, upon the objects to be illuminated —the books, desks and blackboard.

There are, indeed, no dark days, so far as this building is concerned, and the teachers report less weariness and nervousness, both among teachers and pupils, when the day is over, than was usual in window-lighted schoolrooms. It is the universal testimony of the many visitors that the lighting conditions in this school are ideal, and the problem has been solved, so far as new buildings are concerned.

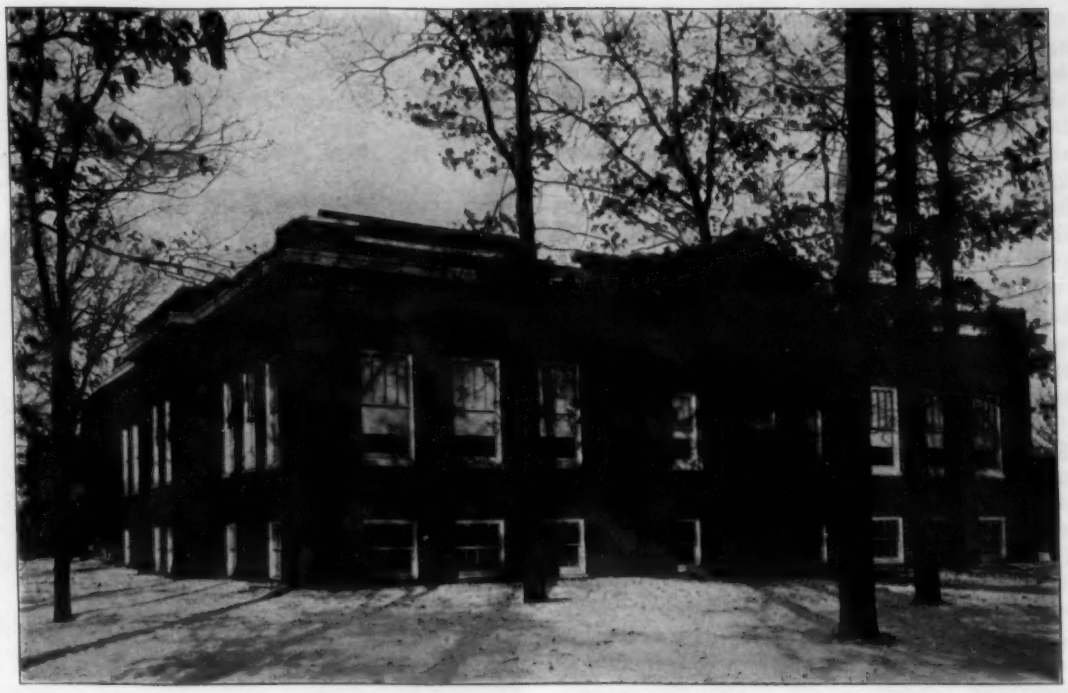
Perhaps the greatest bugbear to one-story skylighted schools in the minds of most readers of this article will be that of supposedly heavier cost. The Elm Street school is strictly modern, the material was of the best, the workmanship high class, and in respect to sound and lasting construction it will challenge comparison with the best. Its cost, including every element except site, figures less than $5,000 *per room*. Other Chicago suburbs seldom equal this record on two-story construction of equal merit, while Chicago itself seems unable with extra effort to reduce the cost below $6,000 *per room* in three-story structures. Evidently, then, the supposedly higher expense for a one-story building is purely imaginary.

Some reasons therefor may be interesting. The ground plan for one-story construction is much reduced, because of the smaller hall space required. Every foot of reduced ground plan by lessening the cubical contents of the building reduces costs quite materially; there are no expensive stairways; the partitions need not be of brick; no fire escapes mar the exterior; and the foundation walls need not be so heavy for a one-story school. These elements counterbalance the extra cost of larger basement and roof.

As to the size of the lot, however, the requirements for this type of building are much greater, so much so as to be prohibitive, perhaps, where real estate values are high. There is the possibility, though, of utilizing the flat roofs for playgrounds, thus permitting the building to be spread over the entire school lot. The tendency today, especially among progressive communities, is toward larger school sites. Growth of cities and enhancement of land values are often anticipated by early purchases for school uses. Where sufficient space cannot be afforded for schools but one story high the top stories should at least be lighted from above, since flat roofs, including the skylights, can be built for as little as gable roofs.

It may be worth while even to consider the economic side of the lighting question. While it is true the school does not pay dividends, as does the factory, yet the waste of time, opportunity, energy, and health in a school is a loss of investment itself.

The number of dark days in window-lighted schools is large and teachers in such schools are unanimous in saying they accomplish less by from 25 to 50 per cent on dark days. The loss is greatest perhaps in the lower grades. They tell us that the reason is because children are unable to see clearly the blackboard work; the printed page is indistinct; the eye-strain is severe; and that the child's nervous energy is consequently soon exhausted. The artificial lighting found in most schools is abominable, while many are not even supplied with artificial light. The economic loss from the reduced efficiency on dark days is tremendous when computed month by month. In most parts of this country there are perhaps a hundred and more dark days each year. The business man who may be influenced only by dollars and cents can do his own computation. The writer is here concerned with the health of the children, upon which no conscientious parent would attempt to place a money value.



2. ELM STREET SCHOOL, RIVER FOREST, ILL.

Now that our top-lighted school has been thoroughly tested, the community is so well pleased that many are asking what has been done to improve our window-lighted Central school.

The board is now testing, in this window-lighted building, the "eye-comfort" system of artificial lighting, for sale by the general electric trade. The Tungsten lights, with their high efficiency, are used. Because of the brilliancy of this light it is concealed from view. By means of bowl-like reflectors, all light rays are thrown upon the ceiling and they come back to the child with delightful softness and perfect diffusion. Excepting quality of light alone, this system has all the advantages of skylights—direction, diffusion, softness and protection to the eye. Light ceilings are, of course, necessary. The prediction is made that this novel scheme of throwing strong light upon the ceiling of rooms will yet be adopted in all window-lighted schools where boards of education take the time merely to consider the economic loss from dark days.

To the further inquiry of what may be done to improve the lighting in window-lighted schools the reply is that prism glass in the windows effects a much better distribution of the light that strikes them. This sheet glass with prism ridges changes the direction of most of the light rays as they pass through. By this means much of the superabundance of light that falls on the desks and floor near the windows overwhelming the children, may be directed to the ceiling and to the dark side of the room, and thus far better distribution is secured.

4. Top-lighted School-room in the Elm Street School. Note entire absence of dark corners.

The Central school here adopted, some years ago, these prisms to improve the lighting in certain dark rooms and the results have been highly satisfactory. Other rooms need them; in fact, every window-lighted school should adopt prism glass to diffuse and equalize the light. If this were done the shades might then be drawn over certain windows whose light shines directly in the children's faces.

In too many schools proper consideration of the tinting of walls and ceilings is lacking. That dark colors absorb light while light ones reflect most of it is well known but often ignored in practice. Light walls and ceilings will assist materially in securing even distribution.

Correct lighting is no more important than is thorough ventilation, though what constitutes wholesome air and satisfactory ventilation are now mooted questions. Physiologists and sanitary experts have long thought they had discovered and identified the chief contaminating element of expired air and that that element was carbon dioxide. For years have we been battling with this lurking enemy only to be now authoritatively informed that carbon dioxide is apparently innocent of the charge and capable of doing no harm.

Physiologists, notably Gulick in this country and Paul and others abroad, have demonstrated by actual experiment repeated over and over again that carbon dioxide, even when increased as much as thirty-three times beyond normal, showed no evil effects upon the human body. Men lived in air-tight chambers, in atmosphere highly charged with carbon dioxide for days without injury, either at the time or afterwards. During the period of enclosure they spent several hours at hard muscular labor and again at intellectual work and finally at rest. There were not the slightest indications of discomfort so long as the temperature and humidity were kept normal. When either or both temperature and humidity were increased, the former to 75 degrees or 80 degrees and the latter to 80 per cent of saturation a temperature or fever condition was invariably noticed in the subject. But with normal heat and moisture there proved to be no evil effects that could be detected from living in and breathing air highly charged with carbon dioxide, or in breathing over and over again for hours and days the same expired atmosphere. The lesson of the Black Hole of Calcutta must, in the light of these experiments, be explained on the ground of exceedingly high temperature and humidity.

Thus are upset entirely the old standard and old ideas and even the experts are left in the dark. They maintain with renewed confidence, however, that expired air is unhealthful, though what the noxious elements are, is unknown.

8. Looking forward in another classroom.

Their unanimous command to the ventilating engineer remains as before for frequent change of air and abundance of it for the sake of health, and to this is added the injunction *to furnish the proper humidity.*

From another direction comes complaint even more disturbing. The hot-blast, hitherto considered the most nearly perfect system, not only has not been furnishing the necessary moisture for the air after it is heated, but it does not, in many plants, thoroughly distribute its supply of fresh air. The air coming in at one point and being forced out at another moves in slender currents, it is believed, leaving parts of the schoolrooms in a dead calm. If this system is as perfect as claimed why does it not ventilate as well on muggy days as at other times? Teachers, moreover, are rebelling at not being permitted to hoist windows when the temperature soars or when it is desired to cool a particular room for gymnastics.

From many schools comes the complaint also that this system causes cold draughts along the floor, especially near the cold-air exit, thus causing to certain children much discomfort, to say the least. This is especially true in very cold weather. Other critics maintain very plausibly that expired air, being several degrees warmer than the breathing zone, by which they mean the layer of air about the height of the children's heads, rises to the ceiling carrying its unknown impurities with it; but before it can escape to the outside, it must cool and descend, passing again through the breathing zone where a part of it, at least, is again breathed in by the children.

These critics of the hot-blast system would have the ventilating engineer devise a method of allowing air to exhaust at the ceiling level or at least above the breathing plain in order to avoid forcing the once-expired air back into the breathing zone. To this the ventilating engineer replies with good grounds that the only way to heat and ventilate a room in cold weather by this system is to force in warm air and exhaust the cold. This necessitates having the air exits in cold weather at least near the floor of the classroom.

With these shortcomings of the hot-blast system in mind some are urging more use of win-

6. Kindergarten Room with class ready for home. Note cold air vent under blackboards and doors.

7. Tar and Gravel Roof of Elm Street School. View shows saw-tooth Skylights and Ventilators.

3. An unfinished room showing construction of skylights.

dows for ventilation, but window ventilation is not satisfactory for several reasons, nor can it be made so. It is impossible to secure from windows an even and well-distributed circulation of air, nor can the room atmosphere be changed with sufficient frequency, especially in mild and heavy weather. The most glaring evil of window ventilation is draughts, while a combination of sunshine and slight wind makes the rattling shades a nuisance. In use of windows lies no more hope for a scientific solution of ventilation than for lighting.

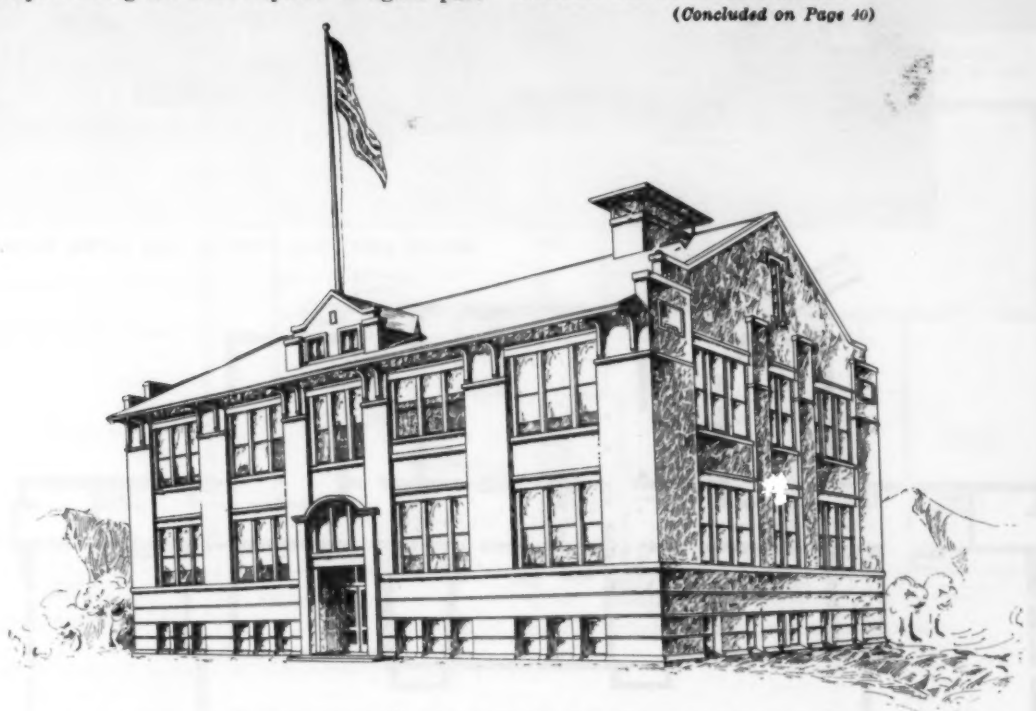
With this disagreement among physiologists and sanitary experts on the one hand as to what constitutes vitiated air and differences among the educators and engineers as to the merits of the hot-blast system and window ventilation, River Forest chose the hot-blast in the hope of curing its shortcomings. The board felt unwilling to rely upon gravity to furnish abundance of fresh air, because the slight difference in weight between warm and cold air would not afford frequent change of room atmosphere in all kinds of weather. They installed, on the contrary, a more powerful fan than is ordinarily used in buildings of this size. With superabundance they have lessened the possibility of breathing over again the same air.

A perforated steam pipe extending across the air chamber furnishes abundance of moisture in the form to be most readily taken by the hot dry air. The amount of humidity is thus easily regulated, the degree being indicated by the wet and dry bulb thermometer. The cold floor-draught was avoided by a long and ample exhaust six inches by fifteen feet along the floor leading into the coat room, whose doors are closed in cold weather. (Cut 6.) This long widely spread exit accomplishes two most desirable results; it substitutes a slow, well-distributed and unnoticeable current along the floor, instead of the objectionable strong one, and it secures much better circulation over the room by this gentle pull along almost the entire side of the room. Flags and plants in various parts of the room are always swaying gently in the constantly moving atmosphere. Once in the coat room the air exhausts through a ceiling vent into the attic and through ventilators on the roof to the outside. (Cut 7.) Coat rooms contain as pure air and are as thoroughly ventilated as the class rooms.

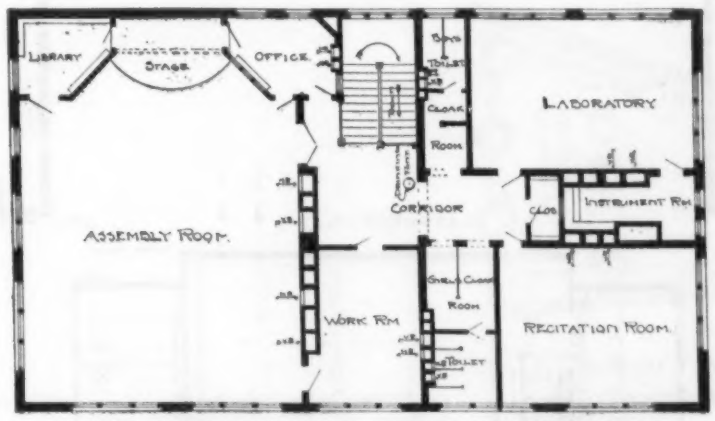
Thus have been met most satisfactorily all the objections to the hot-blast system except perhaps forcing air once expired to again pass through the breathing zone. Such a superabundance of air is forced through the rooms by the powerful fan, however, that the evil effects of this, if there be any, are at a minimum. By keeping coat room doors open in moderate weather the air may be exhausted above the breathing zone. Numerous visitors who claim to have a keen scent for "close" air are pleased to declare most emphatically that the air in these rooms is as good as that outside, even when the air is forced out at the floor level.

With an ample amount of moisture a temperature from 63 degrees to 65 degrees five feet from the floor proves entirely comfortable. Pupils and teachers are enthusiastic over this pure, humid air. The attendance is unusually good because of fewer cases of colds, and it is to be hoped that catarrh, adenoids and throat troubles will be much reduced.

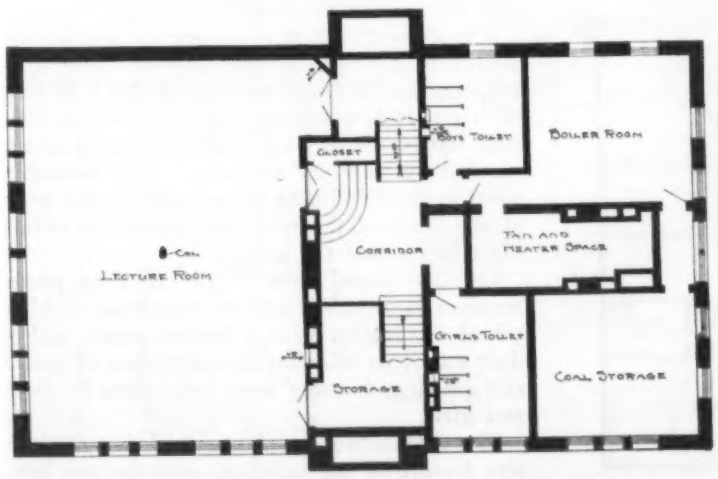
(Concluded on Page 40)



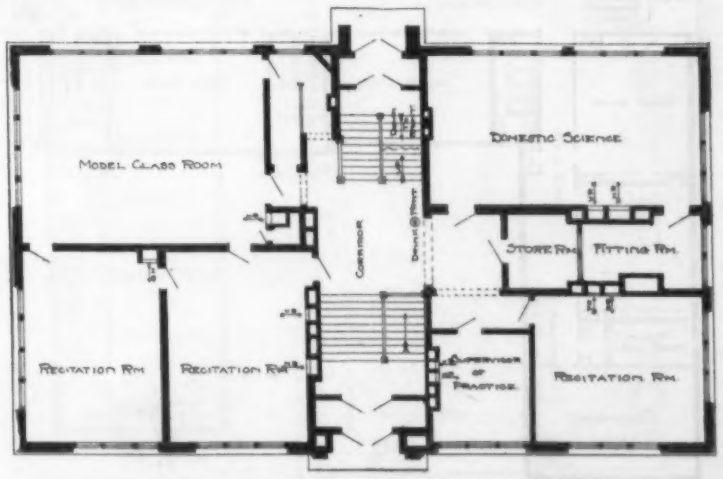
SAUK COUNTY TEACHERS' TRAINING AND AGRICULTURAL SCHOOL, REEDSBURG, WIS.
Alvan E. Small, Architect, Madison, Wis.



SECOND FLOOR PLAN, SAUK COUNTY TRAINING SCHOOL.

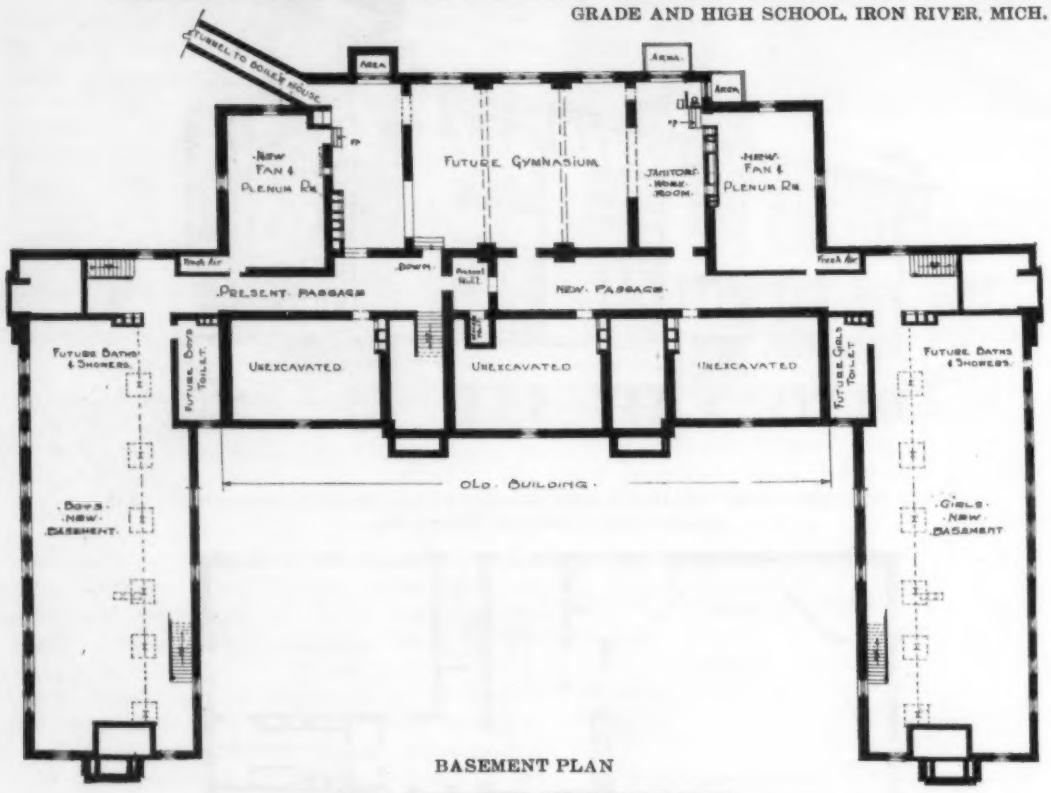


BASEMENT, SAUK COUNTY TRAINING SCHOOL

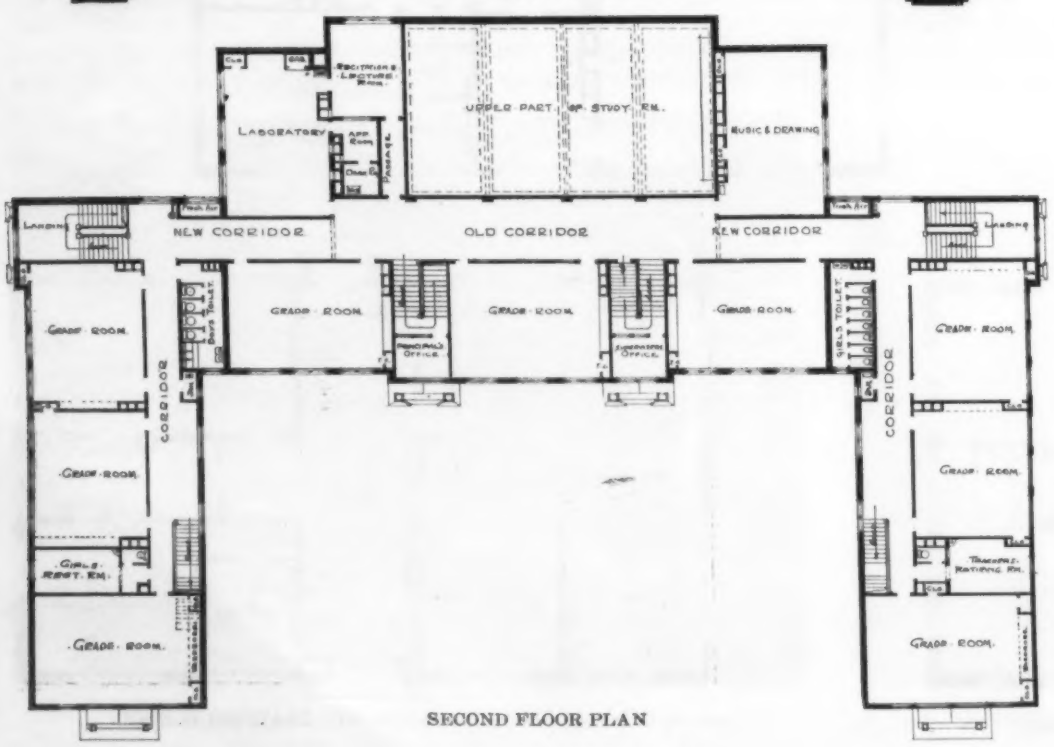


FIRST FLOOR, SAUK COUNTY TRAINING SCHOOL.

GRADE AND HIGH SCHOOL, IRON RIVER, MICH.



BASEMENT PLAN



SECOND FLOOR PLAN

IRON RIVER PUBLIC SCHOOL BUILDING.

That the public schools should be the center of community life is becoming more and more appreciated, not only by school authorities and social workers, but by entire cities and villages. One of the best concrete expressions of this conviction on the part of a progressive community may be found in the new public school building, recently completed and occupied at Iron River, Mich.

Iron River is a thriving little town of some 7,000 inhabitants in the upper peninsula of Michigan. It had until recently a fair high school building and several small grade schools scattered throughout the town. The present new building is the direct result of a desire on the part of the school board and citizens, led by Superintendent R. A. Brandt, to have a building which will be the center of interest for the whole village, not only in school matters, but also socially, commercially and politically.

The building consists of a main central portion, 140x78 feet, and two wings, extending forward from the main part, and measuring 101x38 feet. The building covers a ground area of 19,280 square feet, and has a total of 36,184 square feet of floor space on the two main floors. There are in the building forty rooms, including the class rooms, lavatories and offices.

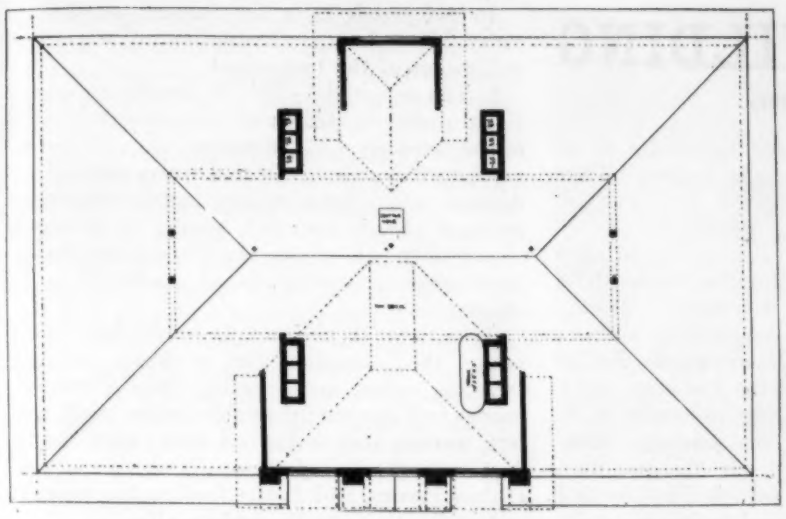
On the first floor there are eight grade rooms, the high school assembly room, with four recitation rooms, a book and supply room, a school board room with a fireproof vault, the superintendent's office, and toilets for boys and girls. The main corridor on this floor extending east and west is 216 feet long.

The grade rooms have an average seating capacity of about forty-five pupils. The high school assembly room measures 66 feet x 36 feet, with an 18-foot ceiling. It will comfortably seat 180 pupils and will accommodate a larger number in case of necessity. The assembly room is beautified with ornamental plaster work at the front of the room and about the beams extending across the ceiling.

On the second floor there are nine grade rooms, a large music and drawing-room, a high school laboratory, with a lecture room, and a dark room; an office for the supervisor of music and drawing, teachers' room and toilets for boys and girls.

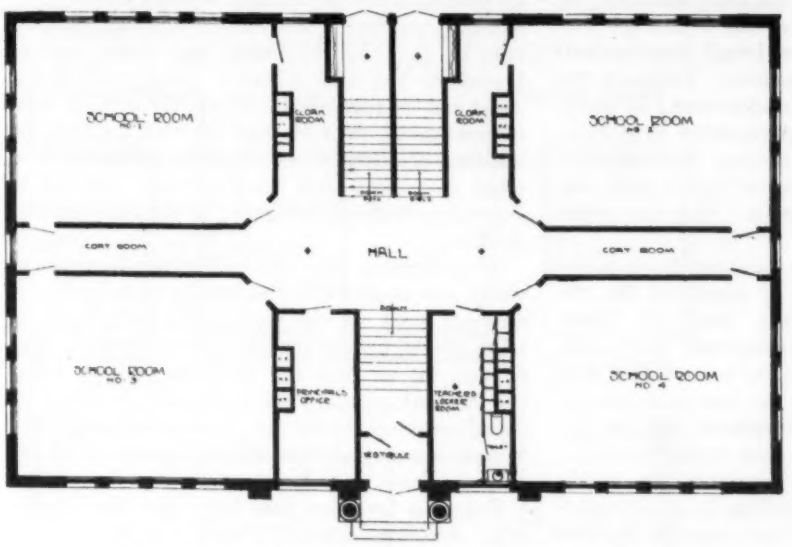
The outside heating plant, which is a distinctive feature of the building, contains two low-

(Concluded on page 44)

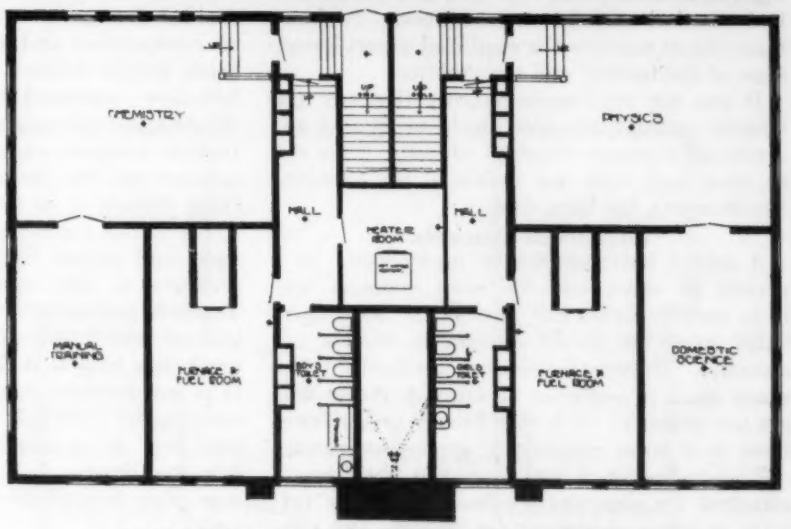


ATTIC AND ROOF PLAN, HARLEM CONSOLIDATED SCHOOL.

NEW CONSOLIDATED SCHOOL, HARLEM TOWNSHIP, WINNEBAGO COUNTY, ILLINOIS. Cost, $17,000.

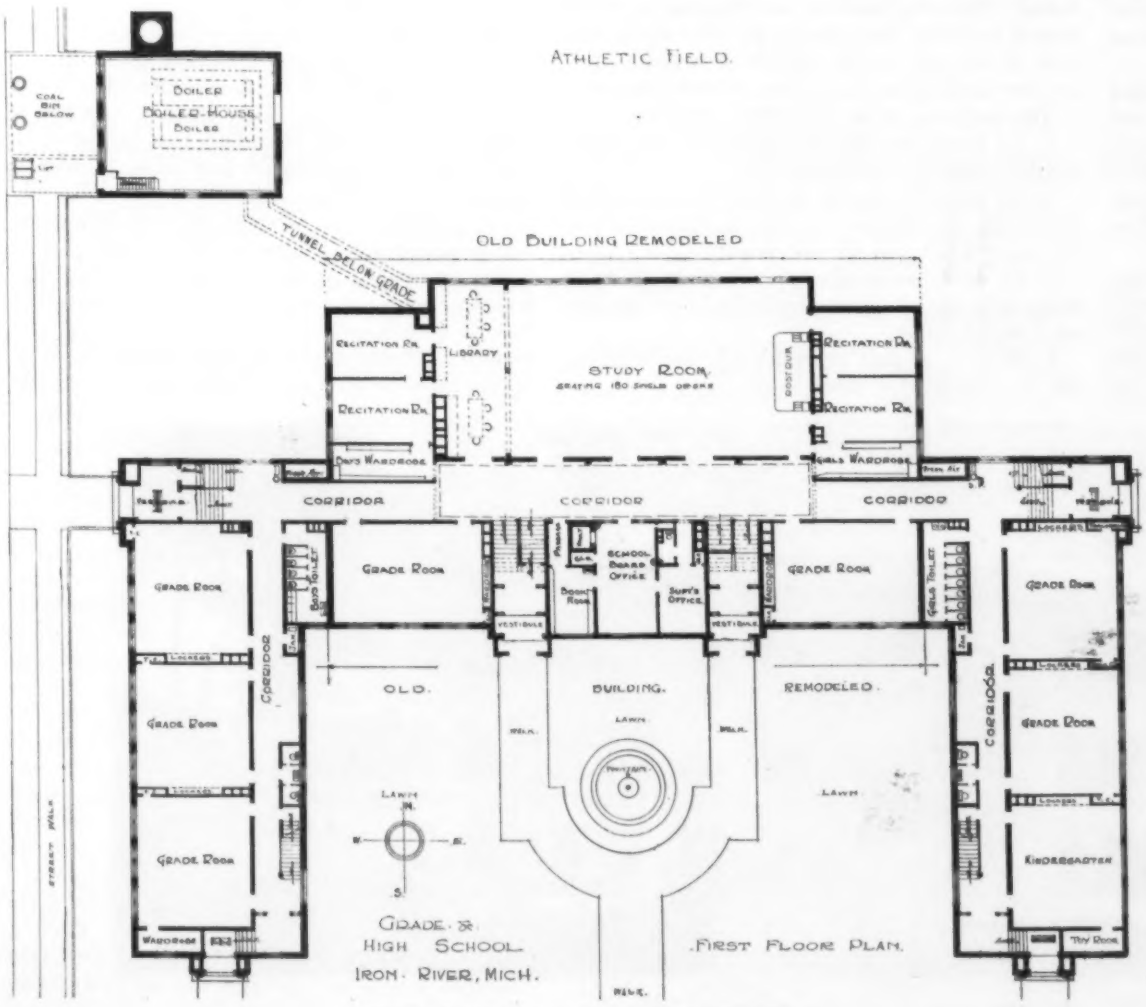


FIRST FLOOR PLAN, HARLEM CONSOLIDATED SCHOOL.

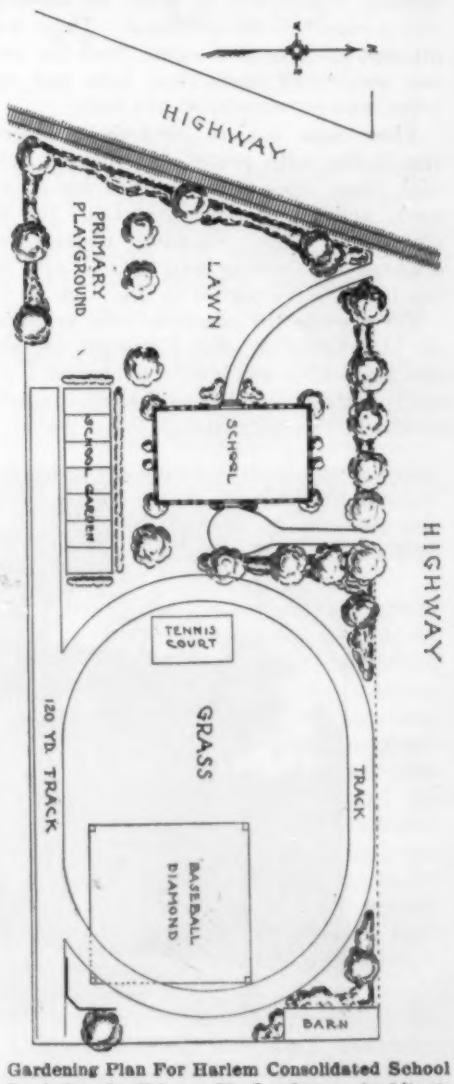


BASEMENT PLAN, HARLEM CONSOLIDATED SCHOOL.

Reproduced through the Courtesy of County Superintendent O. J. Kern.



FIRST FLOOR PLAN, IRON RIVER SCHOOL.



Gardening Plan For Harlem Consolidated School
Louis Brandt, Urbana, Ill., Landscape Architect.

PROBLEMS IN SCHOOL BUILDING

By R. CLIPSTON STURGIS, A. A. I. A., Boston, Mass.

Hardly any two people will agree as to what an economical school building is. The architect is apt to judge by the cost per cubic foot; the school committee or the taxpayer by the cost per pupil. The teacher judges the building by its arrangement and equipment for work; the average individual by its appearance.

All these are methods of judging, but only partial methods. The building built for a low cost per cubic foot may include a large amount of waste space. The building of low cost per pupil may have poor accommodation or equipment. The well planned building may be poorly built. The appearance may be deceptive. Show for verity.

To judge rightly one must know that the building includes all that is essential for teaching and no more; that it is well and permanently built and without extravagance. To know these things requires the combined expert knowledge of the teacher and the architect.

It was not until quite recently that any systematic attempt has been made to do this and arrive at a proper standard of cost. This can be done, and, with due provision for changing requirements, has been done.

Educational Demands.

A school building can be made costly in a variety of ways, but the most common way is to include under the roof waste space or to build rooms or install equipment that is not essential. Rooms or corridors needlessly large, waste space in basement or attic, or rooms that are not essential, such as a library or a science room in a lower elementary, are extravagances.

Twenty-five years and more ago there was a standard for elementary schools. For the primary so many classrooms for 56 each, and simple toilet accommodations; for the grammar schools, in addition to these, an assembly hall and a room for the principal. There was some attempt made to give warm, fresh air, and there was sometimes mechanical bells and speaking tubes, and an occasional gas light.

Then came modern methods of heating and ventilating with power and electric light, and with these came new demands for educational work, and better accommodations for teachers and pupils alike. Cooking, manual training, drawing and sewing were added, and the first two had rooms assigned to this work.

For a while the demands were so varied that the old standards were lost sight of, and each new suggestion was considered without any particular attention being paid to the probable cost involved. Various things were added to the school building which added materially to its cost and did not add materially to its vital use as an educational tool.

School Committee Standard.

The first thing the school committee did after school building was put into the hands of an independent board was to lay down a definite schedule of what was necessary to equip a school for teaching children of primary grades and of grammar grades. This was the first step, and a most vital one in attempting to establish an economical standard. In the primary, classrooms and a teachers' room. In the grammar, classrooms, teachers' room, principal's room and rooms for cooking and manual training.

The committee did not take the next logical step and do the same for the high schools.

Those who had charge of the buildings then decided further on certain broad requirements of construction and equipment. Common red brick, simple designs, little ornament, no sham, first-class construction, permanent materials, the strongest and safest plumbing, thorough ventilation, complete equipment of lights, bells, telephones and fire alarm signals. This was something definite to go upon.

The initial requirements were cut down to the right and proper limit. It remained for the architect to plan compactly for this limit. Teachers generally, superintendents, and members of school committees do not realize how much they have to do with the cost of buildings. It is not the extravagant architect, it is not the extravagant material, it is not costly construction that is primarily responsible for costly school buildings. It is including in school buildings cubic feet which are not essential for the work.

The Economical Plan.

Economical planning is primarily based on two things, economy of space and durable material. There is, however, another aspect of the school building that should be considered, and that is its use ouside of school hours. It is another kind of economy that is here involved.

The problems to be considered are four:

1. To determine the essentials and the nonessentials that are desirable.

2. To plan compactly to meet these requirements, having always in mind as essentials for the child, light and air and beauty.

3. To study carefully all materials so as to make wise choice, balancing initial cost and annual maintenance.

4. To plan so that everything is available, as far as may be, for other uses.

In two words it is the modern problem of every big industry—elimination of waste and utilization of the by-product.

1. The essentials.—This is largely an educational question. One may rehearse briefly some of the demands made in recent years. Some require special expenditure and space, cooking, industrial, etc. Some require merely equipment in space already provided, sewing in classroom or assembly hall. Some require not even equipment, physical exercises being conducted in the classrooms.

Starting with the old assembly hall, there came the demand for cooking, manual training, sewing and drawing; then science, libraries and gardens; then physical training, doctors, nurses; then industrial work; then the reduction in the size of classes, fresh-air and out-of-door classes, and finally feeding the anæmic, and perhaps eventually feeding all.

All these things may and perhaps properly do belong in the elementary schools, but the educators must decide not merely whether teachers can be provided to carry on these various branches, but also whether rooms and equipment can be furnished. When the cost of these is considered then it may be well to consider whether all these lines of education are worth what they cost, and whether they can all be carried on without detriment to the fundamental studies.

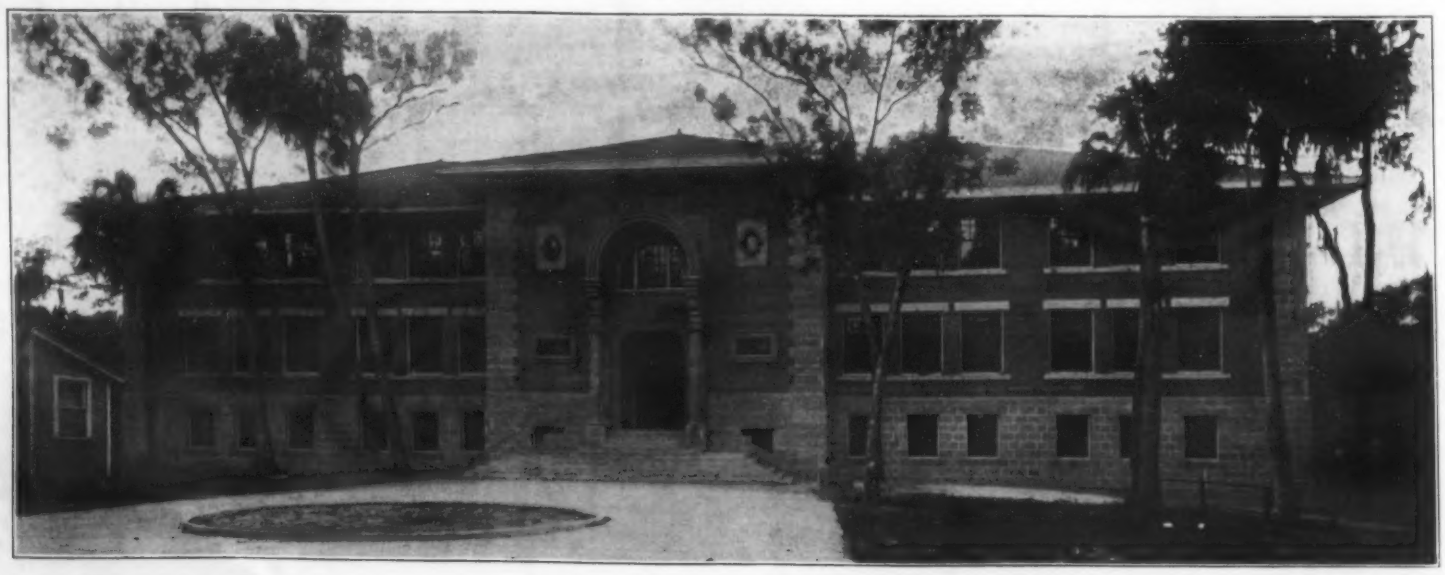
To determine the value of certain branches of study one must know the results obtained. Industrial work in the elementary schools is on trial, going through an experimental stage. Until one knows that the teaching has produced the desired results one is hardly justified in spending much money for rooms and equipment. Simple accommodation and equipment will answer for trial.

Take the branches that have had the longest trial—cooking, sewing, manual training. Are the girls to be relied on in the kitchen; are they capable plain seamstresses; do the boys know as much as the country boys get in the tool shed, or the country girls, helping mother? One ought to know about these things.

On the educators, therefore, rests the first responsibility for economical school buildings.

2. The compact plan.—A compact plan is one without waste space. If a 10-foot corridor is wide enough 12 feet is waste. If a height of 12 feet will light a room 24 feet wide 14 feet is waste. If classrooms open from one side only of a corridor it is a waste of corridor space, which might serve rooms on both sides.

The compact plan is that which has no useless floor area. A compact building is one that has no useless cubic feet. For the type of elementary school advised by the school committee of Boston a definite area of plan, and a definite



NEW PUBLIC SCHOOL, DAYTONA, FLA.
W. C. De Garmo, Architect, Miami, Fla. Cost $41,000. A fine type of the Modern Fire-Proof Southern School.

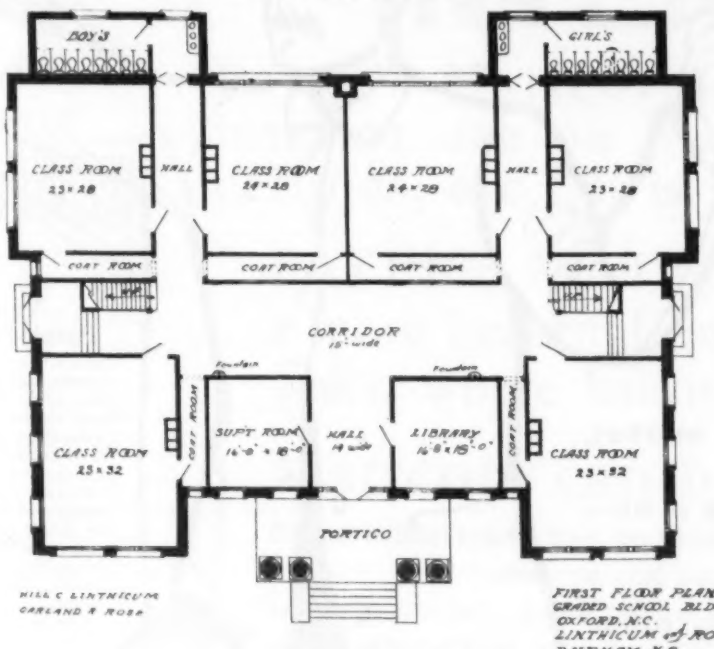
cube for the building has been established. And thus with the character of accommodation defined and its equipment settled, and with the size of the building established, a fixed standard of cost is arrived at by a careful study of construction and material.

3. Economical construction.—There will always be different views as to what this means; with some it is equivalent to inexpensive if not cheap. Even among men who are trained to judge—architects and builders—there will be difference of opinion. The Boston board decided in favor of the most permanent materials and the least expensive that belonged in this class. The study of this problem has been carried into everything, from the construction of walls and floors to the smallest detail of plumbing and hardware.

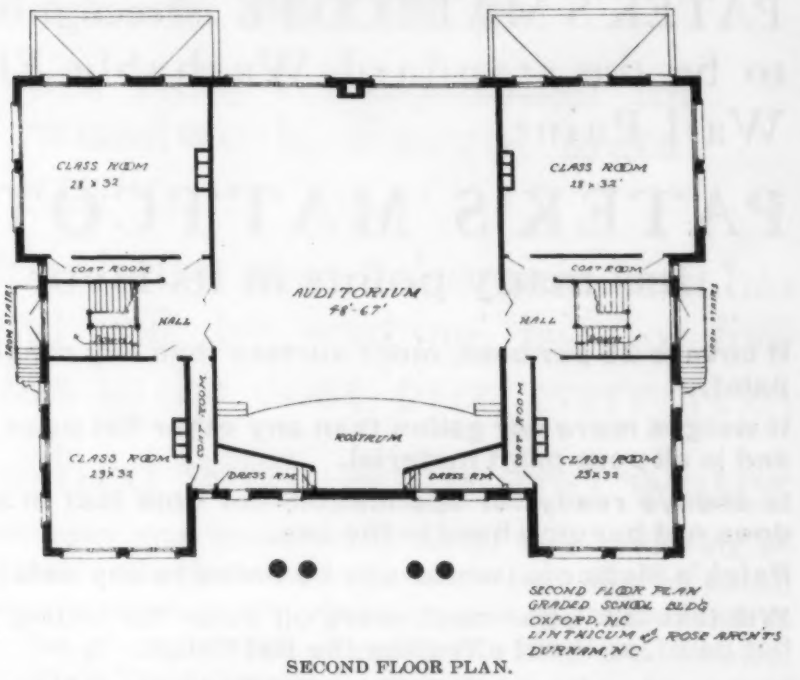
Standards of construction and material being thus fixed, a standard of cost is fixed, and it is at once a standard cost per cubic foot, and a standard of cost per pupil, as one is based on the other.

4. General availability.—The school building, with its rooms and halls, its opportunities for

GRADED SCHOOL BUILDING, OXFORD, N. C.
Linthicum & Rose, Durham, N. C., Architects.



FIRST FLOOR PLAN.



SECOND FLOOR PLAN.

instruction in household work and in handicrafts, and its grounds and gardens, is too valuable a possession to be left empty 200 days in the year. How to make use of it is more a problem of the educators than of the architect, and however it is looked at, it appears to be a pretty difficult problem. Again it must be considered step by step, the cost counted, the experiment tried, the results tested.

In any case building and grounds should be planned with this more general use in view. The extended use of school buildings must depend not only on the educators and those responsible for the buildings, but also on other city departments and on the public. The support and co-operation of others is essential if such use is not to be too heavy a burden on the schools.

The High School Problem.

The problem in the elementary school is simple in the extreme compared with that in the high schools. Boston, until recently, had but a few central high schools. English and Latin for boys and English and Latin for girls. East Boston, Charlestown and Roxbury had small local schools. The only building that had any equipment at all in line with modern educational requirements was the boys' high and Latin, and that was built in 1880.

In addition to the classrooms there were recitation rooms and studies. In addition to the assembly hall, a gymnasium or drill hall, and there were also rooms for science, chemistry and physics and for drawing. Cooking was dropped from the girls' schools and manual training from the boys'. Now, in addition to all these, there are baths for the gymnasium, household science for the girls, commercial work, handicraft, with elaborate equipment and power, zoology and botany. The equipment for all this scientific and industrial work is very complete, sufficient in many cases for advanced work.

The old central high schools have been supplemented by high schools in all the outlying districts with all modern equipment, and now comes a demand, steadily growing, for specialized high schools. In response to this demand the school committee has successfully established the mechanics arts high, the high school of commerce, the girls' high school of practical arts, the girls' trade school, and the clerical high school.

If careful study of the cost of new features is necessary in the elementary schools, it is surely doubly necessary here. The cost of building, per pupil, in a high school, is three times that of the cost per pupil in the elementary (over $500, instead of $175). It would also seem to be wise to go slowly, testing results and making sure that the work is worth what it costs.

The mechanics arts high has been developed slowly, and before the last addition was built and equipped, a most careful and thorough investigation was made of the results produced. This is the wise method of procedure.

Lessons From London.

London furnishes us a parallel example of this sort of thing. The London county council has established a number of industrial schools, mostly small, and careful inquiry is made as to the results of the instruction given, following up the pupils through their employers. In this way they get valuable criticism and advice.

Until such work is done here it will be difficult even for educators who have studied this high school problem to determine what branches should be provided for, and what equipment they should contain. All the modern Boston high schools have a certain amount of accommodation and equipment for teaching special branches, and it is again a question as to what branches, as for example, the commercial, are of sufficient importance to warrant independent schools.

Again, where specialized schools are established, it is a question as to the amount of academic work, that is, the ordinary high school curriculum, that they should provide. London learned that some of its trade and technical schools were specializing too much and neglecting academic work. Employers informed them that in a certain trade less knowledge of the tools used and more knowledge of English would be desirable. Now they lay out an academic course and offer special trade education as an inducement to give the child a better general training. Then they follow up the child with his employer and find out what the education is accomplishing, and where it has failed.

The problems of secondary education are varied and complicated, and have not been

(Continued on Page 39)

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PATEK'S MATTCOTE
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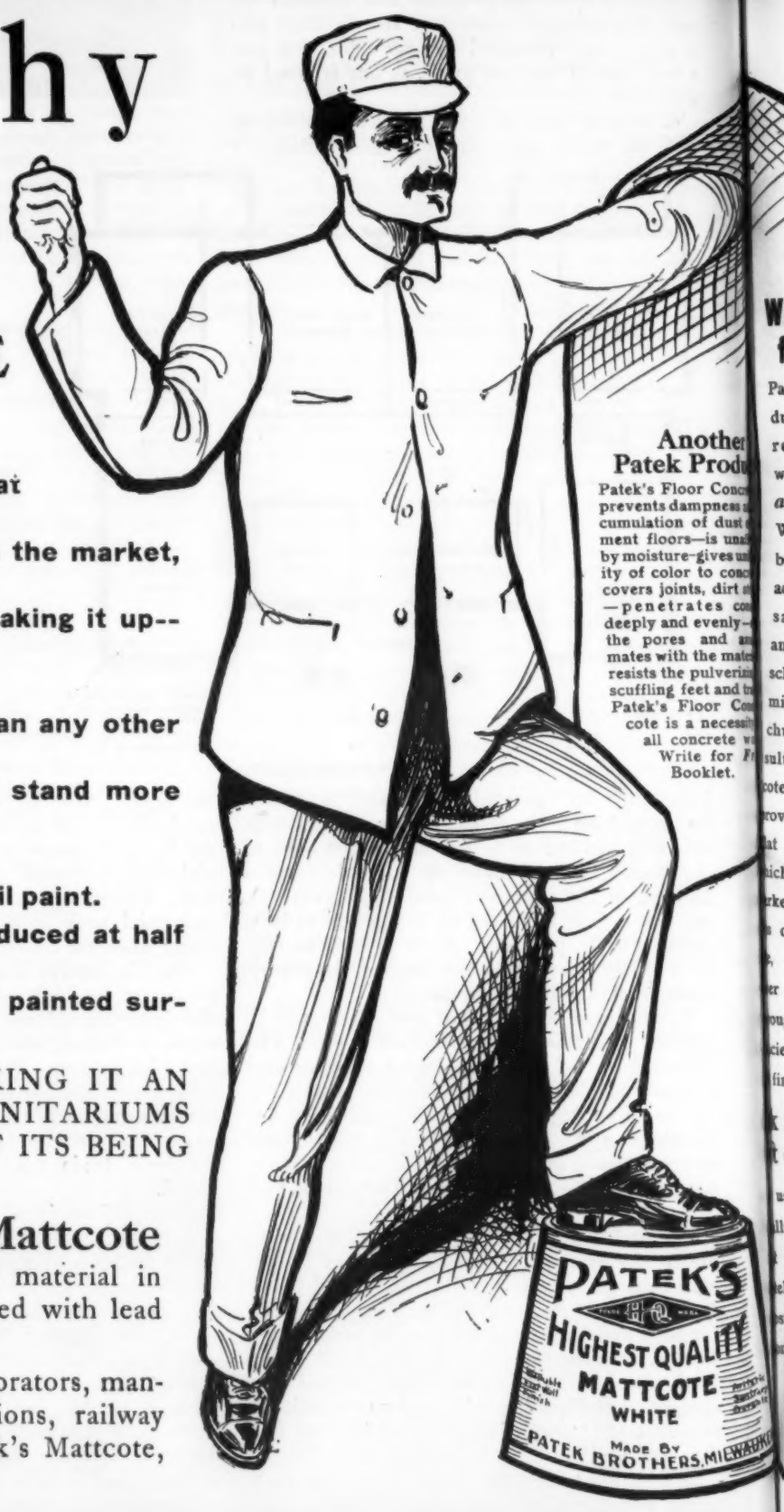

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School Law.

School Districts and Officers.

The ward schools of a city are "district schools," within the Wisconsin constitution (Art. 10, Sec. 3) requiring the establishment of district schools.—Maxcey v. City of Oshkosh, Wis.

The official acts of a county superintendent of schools will be valid so long as he is permitted to exercise the office, although he is ineligible thereto.—State v. Biegen, S. D.

A school board was given authority by the district meeting to purchase a safe. It bought one, paid for it, and transferred the balance of the safe fund back to the general fund. It then bought another safe without any additional authority. *Held*, that, as it had exhausted its authority by the first purchase, the validity of the second purchase could only be upheld under the board's statutory authority.—Glidden State Bank v. School Dist. No. 2 of Town of Jacobs, Wis.

Under the Wisconsin laws of 1898 (Sec. 435), giving school boards the care and keeping of the schoolhouse, books, apparatus and other property of the district, does not confer upon them authority to purchase new property.—Glidden State Bank v. School Dist. No. 2 of Town of Jacobs, Wis.

A school board may employ a suitable person to ascertain the physical condition of pupils in attendance on public schools of the district.—State v. Brown, Minn.

A school board which has no authority in the first instance to authorize a purchase cannot ratify such a purchase, as authority to do the act ratified is a condition precedent to ratification.—Glidden State Bank v. School Dist. No. 2 of Town of Jacobs, Wis.

If a party has entered into a contract with a board of education to erect a school building, he is entitled to abandon such contract and recover the profits that would have accrued to him from its fulfillment, in the event of the voters of the particular territory in question lawfully determining subsequently to the making of such contract that they will not erect such a school building.—Chalstran v. Board of Education of Tp. High School, Knox Co., Ill.

School Taxes.

The West Virginia laws of 1908 (Chap. 27, Sec. 21), as amended by the laws of 1909 (Chap. 90), authorize the board of education of any district containing an incorporated city or town where a graded or high school is maintained which is continued for a longer period than six months, to lay a levy in addition to the general levy in such sections provided for, sufficient for all purposes to conduct the schools of such city or town for the term fixed. *Held*, that, when necessary to accomplish the purposes of such provision, the additional levy may include provision for the enlargement of the school buildings of such city or town or the erection of additional new buildings therefor, but the provision contemplates relief only in cases of immediate necessity, and not mere convenience nor future exigencies.—State v. Board of Education of School Dist. of Parkersburg, W. Va.

Under the Oshkosh, Wis., city charter (laws 1891, Chap. 59), requiring the board of public works, under the direction of the common council, to erect school buildings, giving the common council exclusive right to levy taxes and provide for the erection of school buildings, and authorizing the school board to approve or disapprove of proposed plans for a school building, the city may first prepare plans and secure estimates of the cost of a school building and then provide for the necessary funds for its erection, or it may first make provision for the amount of money which it is considered desirable to expend, and then make plans accordingly, and the adoption of plans for a school building is not a condition precedent to a right to vote bonds to raise money to erect a building.—Maxcy v. City of Oshkosh, Wis.

Teachers.

The board of education of the city of New York may cause separate lists of men and women teachers on the eligible lists to be prepared for use in the exercise of its discretionary power in the appointment to a given position of either a male or a female teacher, and the board has a wide discretion in determining whether a given position shall be filled by a man or woman.—Fitzpatrick v. Board of Education of New York, N. Y.

Female school teachers holding grade A licenses being on the eligible lists are subject to the general rules and regulations applicable to all the others on the eligible lists, and, where such lists are subdivided by separating the male and female teachers, a female teacher holding a grade A license cannot complain of the appointment of a male teacher holding a "graduating class" license, which was a lower grade license, where all the male holders of grade A licenses were unavailable, when in the judgment of the board of education the welfare of the service required the appointment of a man teacher.—Fitzpatrick v. Board of Education of New York, N. Y.

Tuition Fees.

The Wisconsin constitution (Art. 10, Sec. 3), requiring the legislature to provide for the establishment of district schools which shall be free to all children between designated ages, will not be restricted by construction, and what may lawfully be taught in such a school is a part of the curriculum therein, and the fact that the teaching of manual training is not made compulsory by law does not alter the fact that when it is taught it becomes a part of the curriculum, and a pupil of the school is entitled to have manual training taught without tuition fee.—Maxcy v. City of Oshkosh, Wis.

A tuition fee may legally be exacted from nonresident children attending district schools and from those over school age.—Maxcy v. City of Oshkosh, Wis.

School Funds.

The act of the board of a school district in selecting a depositary for school funds is an act in the administration of the financial affairs of the district and involves the exercise of a ministerial or executive function conferred by law, and, where the board awards the funds to the lowest bidder pursuant to capricious and arbitrary action and from personal favoritism, mandamus may be resorted to to compel the selection of the highest qualified bidder as a depositary.—State ex rel. First Nat. Bank v. Bourne, Mo. App.

OKLAHOMA'S NEW STATE BOARD.

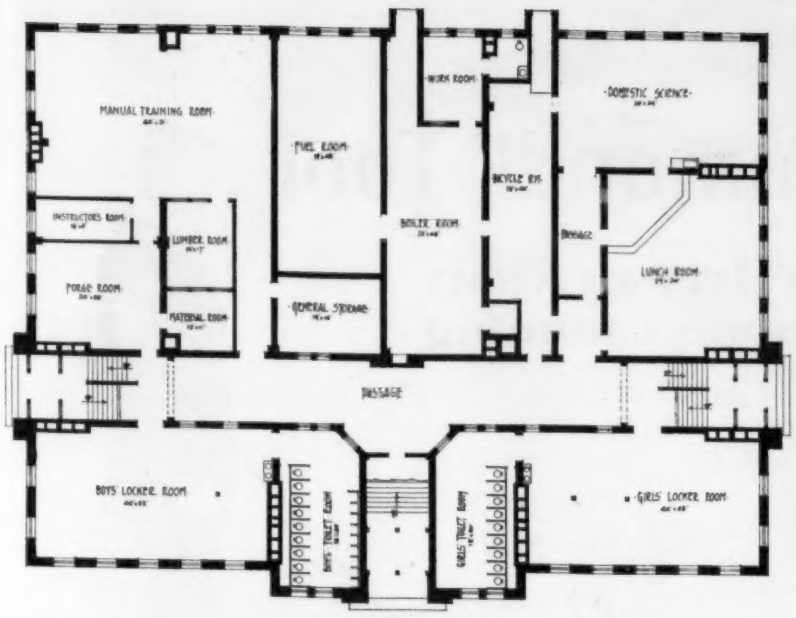
Oklahoma City, Okla. A new state board of education with sweeping powers over all the educational institutions of the state is created by a law passed early last month by the state legislature of Oklahoma. The time honored custom of governing state educational institutions by boards of regents since territorial government began twenty years ago is abolished by the new law.

In addition to the powers heretofore exercised by the boards of regents of the various institutions, the new board is given power to formulate and adopt courses of study for the common schools and county normal institutes and to adopt text books and formulate courses of study for all the common schools and the higher institutions of learning controlled by the state; to have general supervision over the public schools of the state; to formulate rules and regulations governing the issuance of all certificates to teach in the public schools; to prepare questions for the examination of applicants for county and city teachers' certificates; to examine applicants for state certificates and for certificates to teach in the county normal institutes; to prepare examination questions for graduates from the eighth grade; to classify the public high schools and accredit them to higher educational institutions and to formulate and adopt courses of study and adopt text books for state pupils' and teachers' reading circles.

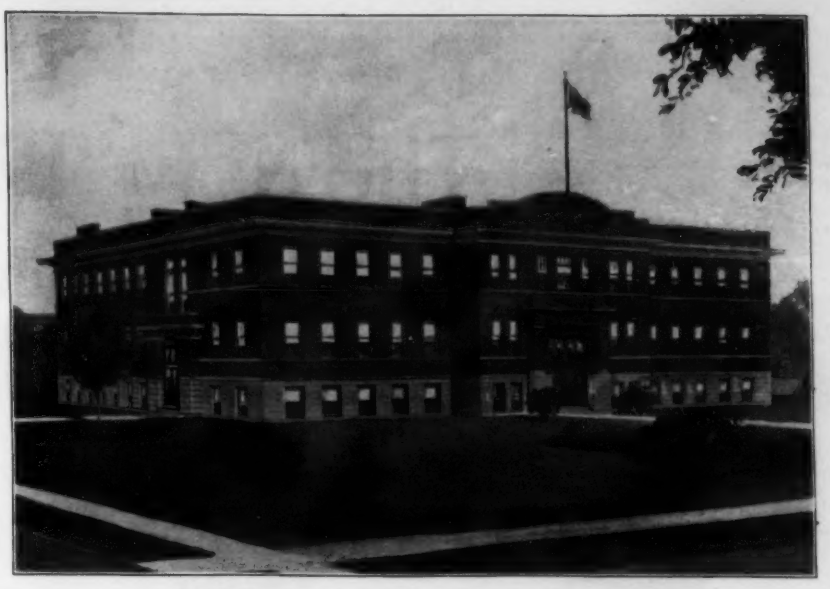
The new board has been given authority to formulate regulations governing the business colleges of the state thirty days preceding the convening of each legislature. The board must submit a budget estimating the necessary appropriations for each institution under its control.

The state superintendent of instruction will be president of the new board, and the six other members are to be appointed by the governor. They serve six years, two retiring each biennium so as to make a continuous board. They receive $6 a day for time actually spent in the work and necessary expenses not to exceed $3 per day.

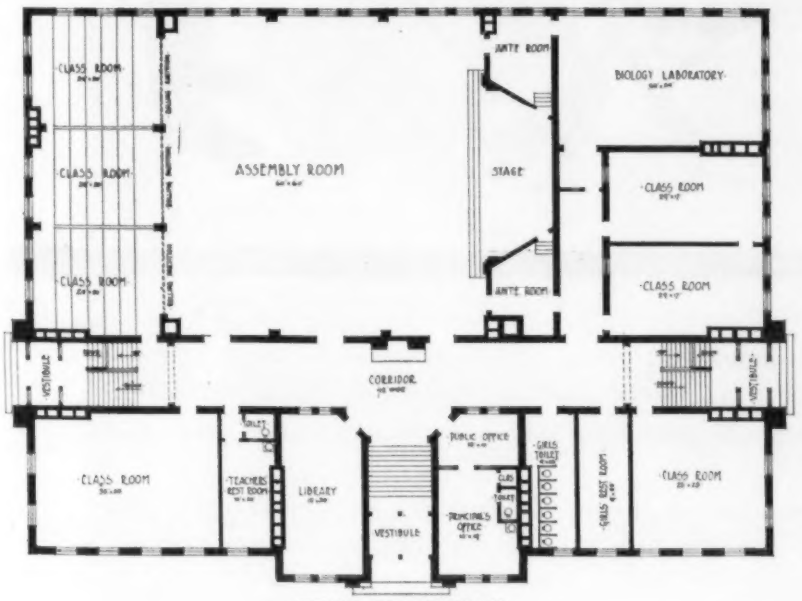
Persecution intensifies that against which it is directed, and thus contributes to its own defeat.



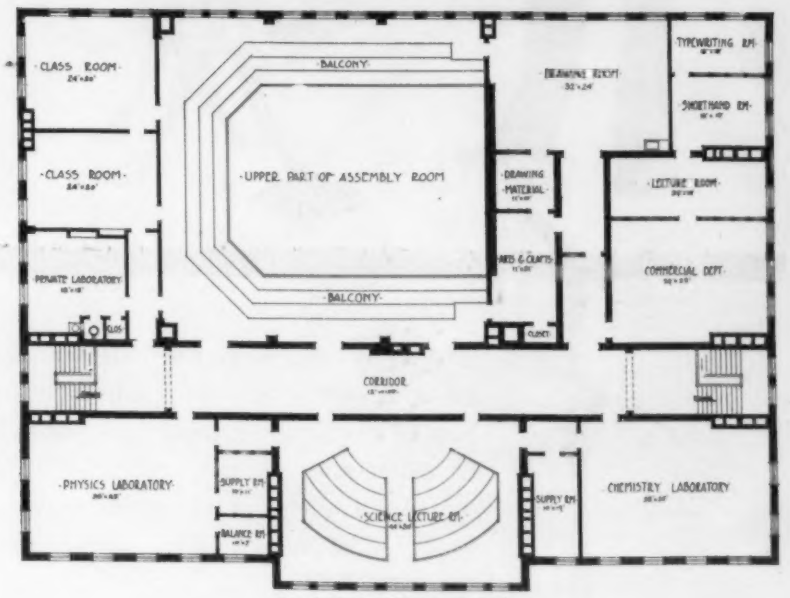
BASEMENT PLAN.



NEW TOWNSHIP HIGH SCHOOL, PROVISO, ILL.
Geo. W. Ashby, Architect, Chicago, Ill.



FIRST FLOOR PLAN.



SECOND FLOOR PLAN.

SCHOOL HYGIENE.

Battle Creek, Mich. The board has recently provided the schools with charts and apparatus for testing the sight and hearing of children. A local physician has given the teachers instructions in testing the senses of children.

A fumigating box has recently been placed in each school building in Bloomington, Ill., to be used in disinfecting all pencils and similar articles that are used by the children and yet are the property of the school. Heretofore, the pencils have been disinfected by dipping them in a disinfecting solution, but from now on they will be placed in a box and given a thorough fumigation with formaldehyde gas.

The pencils are collected each day by the teachers, put into a wire basket provided for the purpose, and the basket put into the fumigating box. In the box, which is practically air tight, is a receptacle in which is placed a few spoonfuls of permanganate of potash. At the close of each day, after the basket containing the pencils have been put into the box, a half gill or more of formaldehyde is poured into the vessel containing the permanganate of potash. The potash causes the liquid formaldehyde to pass into a gaseous state. The box is closed tight and the pencils and other articles are thus subjected to a strong bath in formaldehyde. The pencils remain in the box until some time the next day, when they are taken out to be used.

Dr. Charles F. Kuhn, president of the Detroit board of education, departs widely from precedent in his recent annual address to the board of education. Health is the chief topic discussed, and the soundness of many an accepted present-day method are sharply questioned.

Thus Mr. Kuhn favors replacing common fixed school desks now in use with rubber tipped tables and chairs of varying heights. He says:

"The present desks are inhumane. It is brutal to put children of different sizes in seats of the same height. You have a tall boy cramped up in one of the seats while in the next you may have a little fellow whose feet do not touch the floor. We ought to put chairs in, not of uniform size, but of say a half dozen or more different heights and then the small tables that might be moved about to suit the children. I would have racks also on which the children might place their books so as not to strain their eyes."

Discussing the appointment and promotion of teachers, Mr. Kuhn urges a higher standard of selection in which merit is the sole consideration. "I believe," he writes, "that the physical ability of a teacher should be also taken into consideration. I don't think that we ought to have as instructors for little children teachers with deformities such as harelips and cross eyes, or those afflicted with nervous diseases, who might unconsciously have an unfortunate influence on the little ones.

"Janitors and engineers should be appointed under civil service. Their physical condition should also be regarded as well as their morality. These employes have a far, far greater influence on the pupils than is generally supposed. The need of good janitors and engineers is just as important as the need of capable teachers."

La Crosse, Wis. A system of medical inspection has been introduced in the public schools by the board of health. One physician has been appointed for each building to examine children recommended by the teachers. It is planned to subject all pupils to a complete physical examination once each year. Absentees who are away from classes more than three days are not permitted to re-enter without an examination by the school physician.

William A. Stecher, director of physical education in the public schools of Philadelphia, delivered an address at the convention of the American School Hygiene Association in New York, in February, in which he declared that fully one-half of the restlessness and inattention of school children is caused primarily by their being seated at ill-fitting and uncomfortable desks. He said:

"In a recent investigation in Philadelphia, I found 13,000 pupils sitting in seats so high that their feet could not touch the floor, and many others whose desks were either too high or too low. This causes round shoulders, narrow chests and knock-knees.

"This investigation led to the measurement of 5,676 school children of various grades and ages, in many different communities, for the purpose of trying to fix standards of desk and seat sizes for the various grades. From the results of this I believe that there are necessary at least six sizes of seats in each grade, or else adjustable furniture that can be easily fixed in a few minutes to suit the size of any occupant."

Haverhill, Mass. The school authorities have purchased a "tuberculosis exhibit" consisting of photographs and mottoes depicting the prevention and care of the white plague. The material costs only $30 and will be sent from school to school.

Supt. H. B. Hayden of Rock Island, Ill., has recently organized the athletic activities of pupils in the upper elementary grades. Leaders have been chosen to direct games and contests and every effort is made to have every boy and girl participate.

Topeka, Kans. L. D. Whittemore, superintendent of the Topeka schools, has been made assistant state superintendent of public instruction for Kanasas.

RULES AND REGULATIONS.

To encourage closer co-operation between the schools and homes the Washington, D. C., board of education has voted that one day each month be known as "parents' day." Patrons will be invited to visit the schools where their children attend, on these days, and observe teaching methods.

Providence, R. I. The school committee has recently adopted a new plan for selecting graduates of the local normal school for teaching positions. The principal of the school will list each student who aspires to a position in one of three groups, according to her teaching ability and scholarship. In the first group, from which appointments will be made, will be the exceptionally strong students; in the second, those of good, average ability; in the third, those whose work has been weak and unsatisfactory.

Only those candidates of groups one and two will be considered as eligible for immediate appointment upon their records while in the Normal school, but the candidates in the third group will be placed on the substitute list in order that they may be given an opportunity to demonstrate their ability.

This system, in the opinion of Superintendent R. J. Condon, will tend to make for greater efficiency. It does not close the door of hope to the candidates whose normal work has been of a rather low order, but rather holds out to them the promise that if they make good in substituting they may be considered in connection with the good candidates of the succeeding classes.

Philadelphia, Pa. The school board has recently revised its rules so that the high and manual training schools will come directly under the supervision of the superintendent and his assistants. Heretofore the boys' and girls' high schools and the manual training schools have been directed by the sole authority of their respective principals, augmented by committees of the board of education.

In recommending the new rule, the committee on superintendence reported:

"The present system is defective because many problems of an extremely technical nature must be submitted to committees composed of business men who had no adequate preparation to aid in their solution, and who are too busy even to study them carefully.

"Perhaps the most important reason of all is the need of uniform and consistent administration. The various principals interpret the rules of the board of public education to suit themselves or the peculiar preferences of the various committees.

Boston, Mass. The school committee has recently revised its rules relative to increases in teachers' pay by providing that such increases go into effect upon the anniversary of appointment. In the past, advances became effective at the beginning of the school term immediately following.

Youngstown, O. Under a new law all janitors will be selected on the civil service basis. Regular examinations will be given testing applicants in the elementary branches of study, in the care of heating apparatus, etc.

Lynn, Mass. The school committee has recently revised and simplified its entire rules and regulations. Among the new rules incorporated, one provides that the superintendent, secretary, school house mechanic and teachers may be elected for life.

The rules also require the creation of a committee on decoration which must be consulted by principals before proceeding to decorate classrooms and corridors. A further rule prohibits all organized student activities not sanctioned by principals and permits of school publications only after editing by the principal.

Galesburg, Ill. The school board has adopted the following rules to determine the qualifications and to fix the salaries of teachers.

Minimum qualifications required of applicants for positions in the public schools:

First. For a position in the training school, graduation from an accredited high school or its equivalent.

Second. For a position as a regular teacher in the grades, graduation, (a) from the Teachers' Training school; (b) from a state normal school; (c) from a university or college with one year of successful teaching.

Third. For a position in the high school, graduation from a university or college with one year of successful teaching. This rule shall not apply to teachers of commercial and industrial subjects.

Fourth. Graduates from the city training school with no previous teaching experience shall receive $40.00 per month; where the graduates have had one or more years of successful teaching, they shall receive $45.00 per month.

Graduates from a university or college with one or more years of successful teaching, or from a state normal school, shall receive $50.00 per month.

After the first year, the salary will be advanced annually $5.00 per month until the teacher shall receive $60.00 per month; provided, at the second year she files with the board a first grade certificate.

The salary will be advanced annually from $60.00 per month until it reaches the maximum, $70.00, at the rate of $2.50 per month. A teacher to receive the benefit of this increase must first file with the board a certificate that she has attended regularly and successfully

completed one or more summer courses in some recognized university, college or state normal school.

Fifth. After a teacher has reached the maximum salary, the board will expect her to file, at least once in five years, a certificate that she has attended regularly and successfully completed one or more summer courses in some recognized university, college or state normal school.

Sixth. No salary now paid to any teacher shall be diminished by any provision of this schedule.

Janitors' Rules.

Warwick, R. I. The school committee has recently adopted a set of regulations determining the duties of janitors. The regulations read:

"Janitors shall be responsible for the care and protection of school property given over to their custody; and they shall use every available precaution to guard against fire.

"Janitors shall give prompt and courteous attention to the requests of principals and teachers in their respective buildings.

"Janitors shall be at their posts early enough in the morning to get their buildings properly warmed before the arrival of teachers and pupils.

"Janitors are expected to economize in the use of fuel so far as is consistent with accomplishing the task of suitably heating and ventilating the schoolrooms in their charge. No attempt is expected to lessen coal consumption at the possible expense of the health and comfort of teachers and pupils.

"Janitors shall keep the school yards and walks clean and free from litter. In summer they shall sprinkle the lawns about the school building, if necessary, and shall trim the same at suitable intervals. In winter they shall promptly remove snow from the walks, and in the case of ice forming thereon, they shall sprinkle the same with sand or ashes.

"Janitors are expected to make the slight repairs necessary about their buildings without making a special charge therefor. The cost of the material used in making such repairs will be borne by the department. No extra allowance will be made to janitors for services of assistants in doing the ordinary work that the janitor is expected to do.

"Janitors shall purchase no material of any sort unless authorized by the school committee, excepting in case of some emergency where delay would result in serious damage to buildings or contents.

"Janitors shall be on the school premises or within call of the principal during school hours. This rule shall not apply to isolated districts and only to buildings of six rooms or more."

New York, N. Y. A by-law of the board of education requires janitors to keep an inventory of all articles and materials placed in their care, in a book provided for the purpose. Under a recent revision of this rule, all inventories must be verified and approved twice during each calendar year by an inspector. When a janitor is removed or transferred the inventory must be similarly inspected.

Buffalo, N. Y. The board of aldermen has recently received and filed a resolution, recommended by Supt. H. P. Emerson, limiting male instructors to the high schools and the upper grammar grades.

Minneapolis, Minn. The school board has recently adopted a rule requiring that pupils obtain permission from their respective principals before forming organizations of any kind. Principals must notify the board of their own action. Any student or body of students violating the rule may be dismissed from school or denied the privilege of graduating.

Columbia, Mo. The school board has taken drastic action to prevent the formation of fraternities and sororities in the high school. Not only will student members of such organizations be denied all participation in student and school functions and contests but diplomas will be refused at the end of their courses.

Lowell, Mass. A recent rule promulgated by the school committee reads:

Organizations known as fraternities and sororities are hereby forbidden in the high school, and the head master is instructed to see that no organization of the above nature shall use the name of the Lowell high school as the reason for its existence.

The high school regiment, girls' battalion and athletic association are the only organizations to be recognized, and shall not be permitted to have socials, dances, parties, balls, musicales, theatricals or other social events without the consent of the head master.

The head master is instructed to restrict the number or to prohibit all social functions or events that in his judgment interfere with the regular school work and are prejudical to the best interests of the pupils and the school.

Boston, Mass. Moving picture shows have been barred out of all Boston public schools for the future, following an order by the school board. Supt. Brooks expressed the opinion that a great danger in moving picture shows lies in possible explosions or fires which may cause a panic.

Rochester, N. Y. The school board has recently enforced rules prohibiting pupils in the high schools from connecting themselves with secret societies. Before acting, public sentiment was aroused against the fraternities and sororities through appeals to the parents and a sufficient time was granted to permit students to withdraw. As a result practically no friction resulted from the rule.

Denver, Colo. Two open-air rooms have been opened by the board of education. They form additions to regular school buildings.

VACUUM CLEANING ENDORSED

Russell Sage Foundation Bulletin

The Russell Sage Foundation, New York City, of which Dr. Luther Halsey Gulick is a director, has recently investigated the sanitary value of vacuum cleaning in school buildings, and has sent out a bulletin advocating the introduction of suction cleaning systems.

The Worcester, Mass., Telegram in an interview with superintendent Homer P. Lewis, of the Worcester public schools has reproduced the bulletin of Dr. Gulick in part, as follows:

The message does not advocate any particular vacuum cleaner, but says some one of the many different kinds on the market should be used, as the old fashioned broom stirs up dust and germs, which children should not be subjected to.

"There are 69 cities in 23 states of the United States that are fighting contagious diseases," the message said: They are doing the fighting against tuberculosis and various forms of colds by means of vacuum cleaners.

"Among the 23 states, Wisconsin takes the lead; nine of her cities have installed the cleaners in their schoolhouses.

"Massachusetts, Connecticut and New Jersey each report six cities that have adopted this method of cleaning their schools. The remaining 19 states have from one to five cities each, that have taken this progressive action toward protecting the health of their school children.

"In abolishing the broom and feather duster, these 69 cities have helped to safeguard the health of their children by removing all of the bacteria laden dust.

"In a recent study to discover what the schools of this country are doing to protect the health of their children, the department of child hygiene of the Russell Sage foundation has brought to light the fact that common contagious diseases among school children increased enormously when the windows are closed, and schools in session, and decreased when the windows are open, and vacation comes on.

"One principal cause assigned to explain this situation was dirt and dust arising from the cracks of the floors, meaning frequent colds. Colds mean absences. They also mean less vitality, less vigor for study, and greater susceptibility to measles, mumps, and other children's diseases."

These are some of the facts laid down by the communication received by Supt. Lewis:

"Dry sweeping and dusting is regarded by health authorities as little less than criminal carelessness.

"The elimination of dust is a duty that must appeal with peculiar force to those charged with the responsibility of caring for the health of pupils.

"That pure air, free from dust is as important as drinking water, has been demonstrated time after time.

"Dust danger is a real, not a theoretical, menace.

"The dust problem in school rooms is one that should have the serious consideration of every board of education, every superintendent of schools, principal and teacher.

"Our entire school board are of the opinion that the only way to maintain sanitary conditions in a school building is to install a stationary vacuum cleaning system.

"The dust evil is the greatest problem of sanitation remaining for the public school authorities to solve.

"The usual method of sweeping a schoolroom with the customary broom or floor brush is merely a process of collecting and removing heavy dirt and stirring up the lighter dust to settle again in the room.

"Where vacuum cleaners are used feather dusters can be forever banished; the accumulation of dirt and dust frequently taken up, blackboards, chalk trays and erasers kept free from chalk dust, and the fine germ-laden particles harmlessly removed.

"Scientific research has proved that dust is the greatest carrier and distributor of disease germs known."

The idea of officials of the Russell Sage foundation is to have powerful suction pumps placed in school buildings, and to have suction hose leading from them long enough to go to each room in a school building.

The janitors may go about with their suction hose nozzles and have the dirt and dust sucked from the schoolrooms into a bin or crypt made especially to contain it.

The Need of Fire Alarm Systems.

Mr. B. B. Hatch chief engineer of the Boston Schoolhouse Commission, recently made a statement defining the policy of this progressive body with respect to fire protection. He said:

The Commission installs a complete fire alarm system in all its buildings regardless of whether they are of the so-called fireproof construction or not. We do this because we believe that fires among contents are just as likely to occur in fireproof buildings as among the second and third class buildings. While the fire among the contents of a fireproof building has not the opportunity to spread and do such damage as it has in a wooden building, it can nevertheless create a great deal of alarm and may be the means of starting a panic, especially so among children who have not been drilled to file out in an orderly manner on a predetermined signal. We place no dependence on the telephone for transmitting such signals because we have found it too slow and conducive to confusion and disorder in filing, and also that it centralizes the power to give a signal in one person and one locality. This latter is a very dangerous feature and it is the one most frequently met with in schools. The masters are very apt to want to keep the reins in their own hands, permitting no one other than themselves to give a signal. Imagine what would be the result were a janitor obliged to leave his post to report a fire at the master's office on the second floor, and further suppose that the master was lecturing to a class in the assembly hall or some other part of the building. The janitor must not only locate the master before he can have the signal given, but in such a case as I have cited he must be extremely careful that the scholars are not thrown into a panic by his action. In Boston we drill every school at least once a month, never giving any previous notice before giving an alarm and the pupils never know whether they are going out for a drill or for a genuine fire. The battalion chiefs of the fire department also make occasional inspections of each school in their districts and turn in fire drill signals in an equally unexpected manner.

We met with a lot of opposition at first among masters who thought that they should have absolute control and who feared that an open apparatus would result in many false or malicious alarms. As a matter of fact there has not been a case of false alarm since the system was installed, the nearest thing to it being the opening of the doors out of curiosity and in most cases the one who opened the door has been caught and punished, so that we now have practically no trouble from this cause. We have about 175 buildings equipped with this system and are having practically no trouble in operating. We employ one man who gives his entire time to the work, making monthly inspections during the school time and renewing battery during the summer months.

Boston, Mass. By a unanimous vote the school committee last month appropriated $1,500 for the purpose of sending Supt. Stratton D. Brooks on a tour of educational investigation through the European countries.

Supt. Brooks will sail for Europe on April 18, to be gone three months. He will thoroughly investigate the educational systems of Germany, Switzerland and Italy. The proposed trip is similar to the ones voted upon by the school boards of New York and Chicago and many new suggestions in methods of school management, it is expected, will result.

Portland, Ore. The school board has added a second assistant to Supt. Rigler's supervisory staff.

Mr. P. M. Hughes, for several years assistant superintendent at Washington, D. C., has been elected superintendent of the Syracuse, N. Y., public schools. Mr. Hughes was chosen from a large list of candidates.

LARGER AIMS OF INDUSTRIAL EDUCATION.

At a recent conference of charities and corrections in Pennsylvania, Mr. Paul Kreuzpointner discussed some of the broader reasons for vocational instructions and some of the larger effects which such a system of education must produce. He said in part:

Thus far any discussion of industrial education and its practical application has left the impression in the public mind as if this form of education has no other purpose but to train boys for a trade.

While it is true that the first aim of industrial education is vocational efficiency, without which we cannot procure the means to uphold the material support of our institutions and civilization, nevertheless, it is eminently proper to refer to industrial education and its larger aims and results as contributory and promotive of the aims of the work of charity and correction. Industrial training means the acquisition of proficiency in the use of tools. Industrial education ought to mean the development of those moral virtues, which are the result of intelligence and will-power and are expressed in terms of efficiency, conscientiousness, industry, perseverance, responsibility, honesty of purpose, self-control, love of an active life.

Closely related to this aspect of industrial education is intelligent insight into the relation of work honestly performed to the common welfare and the welfare of those who are dependent upon us.

If we conceive industrial education not only as a means to earn bread and butter, but also as an instrumentality to develop will-power to guide that will-power into the acquisition of good habits, to form these habits into civic virtues and social usages, to control these usages so that they become the basis of good conduct, then we will reap a crop of good character as the final aim of a well conducted industrial school in addition to vocational efficiency.

There is no valid reason whatever why a high grade of vocational efficiency should not, from an educational standpoint, be accompanied by a high standard of moral and civic virtues. If that aim is not attained it is up to us to find out why industrial education does not give full value to society.

Culture, civic virtue and sacrificing public spirit are not always coincident with a high degree of political liberty unless they are cultivated. High literary attainments, fine manners and a supperlative aesthetic life, do not always go hand in hand with good morals, noble character and gentlemanly conduct.

Making the training for vocational efficiency the sole aim of industrial education is to foster an undesirable degree of egotism which will react upon itself, deaden the sense of responsibility for the welfare of the community, make patriotism a mockery and lower civilization. Egotism is a fundamental trait in human nature. Without it there would be no individual incentive and social progress. Egotism is the mainspring of human activity. But for the good of society egotism must be tempered by altruism, and through the enoblement of both these fundamental human traits we attain to a high social and intellectual standard. Industrial education lends itself admirably towards the attainment of this desirable end.

Moreover, the purely manual dexterity training in the use of tools which we have considered thus far to be the aim of industrial education is no longer sufficient for the best interests of industrial society. The diminishing of our resources in quality, if not in quantity, the even keener competition, the increasing density of population, the necessity to apply scientific methods to every day activities of life, compel the acquisition of technical knowledge to meet the demand for increased vocational efficiency.

Therefore, that man will not only be a better mechanic but also a better citizen who understands the nature of the raw materials he is using in his work, who knows the details of the processes of their production and manufacture, of daily questions of transportation, commerce, exports, imports, adulterations, qualities and properties of materials, etc.

There should be a proper blending of the spiritual, of the intellectual and moral aspect of life with the material. If industrial education fails to make a vigorous attempt in the direction to bring these two aspects of modern industrial education into proper relation and support of each other, then it has failed in its function as an educational, as a civilizing factor in the educational system of our country.

The domestic and foreign policy of a country, the problems of intercourse of the people, the transportation of raw materials, and the products of agriculture and industries, the social economic question of municipal, state and national government as these questions are affected by the application of the scientific and technical knowledge of the people, the unavoidable clashing of interests between industry, agriculture, commerce and purely local trades, the endless ramifications and interdependence of all professional, industrial and commercial occupations and the

(Concluded on page 45)

That the Riverside Literature Series supplies abundant material for school reading is indicated by the action of the superintendent, principals, and teachers of Milwaukee, who have arranged with Houghton Mifflin Company, the publishers of this Series, for the issue of two readers for their seventh and eighth grades made up entirely of complete selections from this Series. These volumes are also available for the use of any school system.

The high school at Luverne, Minn., has adopted Barnes' Complete Remington Instructor.

The state board of education for South Carolina will shortly adopt text books for uniform use in all the public schools. The present contract expires in August, 1911.

Cleveland, O. The school board has under consideration a resolution providing that the books adopted for use in the schools shall be paid for by the board as sold to the pupils. All stocks sent to Cleveland will be held at the publishers' account and risk so that no funds of the board will be tied up.

Fond du Lac, Wis. The school board has adopted Huffcutt's Elements of Business Law (Ginn) and Conn & Budington's advanced physiology (Silver-Burdett).

Peoria, Ill. The Palmer writing system has been introduced in the elementary schools.

McMurry's "How to Study and Teaching How to Study," has been adopted by the following Reading Circles, comprising more than 80 per cent of the reading circle business of this country: Arkansas, Indiana, Louisiana, Maryland, Mississippi, Ohio, North Carolina, South Carolina, South Dakota, Tennessee, Texas, Utah, Virginia, West Virginia.

The state of California has adopted "Guide Books to English," one and two, published by Silver, Burdett & Co., for use in the elementary schools. The decision of the state text book board was reached after a further study of all books submitted for more than a year. Mr. W. G. Hartranft represented Silver, Burdett & Co. before the board.

Stockton, Cal. The Modern Music Series, published by Silver, Burdett & Co., has just been adopted.

Merced and Sacramento Counties, California, have recently adopted the Modern Music Series.

Conn & Budington's Advanced Physiology and Hygiene has been adopted for four years by the high schools of Oakland, Cal.

Webster's New Standard Dictionary, students' edition, has again been adopted for exclusive use in the Los Angeles, Cal., schools. Laird & Lee, Chicago, are the publishers. The books were recommended for exclusive adoption by superintendents and principals. Laird & Lee have secured a large number of adoptions for the entire series of dictionaries during the past few years. Their success has been remarkable.

The high school at Red Lodge, Mont., has adopted Barnes' Complete Typewriting Instructor.

The Illinois Federation of Labor has recently prepared a bill for uniform text books for enactment by the state legislature.

The Ritchie-Caldwell text book on Hygiene and Sanitation (World Book Co.) has been recently adopted for the state of California.

Youngstown, O. The following books have been adopted: Montgomery's histories (Ginn); Frye's geographies (Ginn); Mother Tongue language books; Webster-Cooley grammar (Houghton Mifflin Co.); Bailey-Manley spellers; New Education and McGuffey's readers (American Book Co.); Harmonic music series; Spencerian writing books; Curry's literary reader (Scribner's Sons); Gordy's American Leaders (Rand-McNally); Applied Arts drawing books (Atkinson); Reinsch's civil government (Sanborn).

Supplementary books: Ward's primer and first readers, Arnold and Gilbert's first and second readers (Silver-Burdett); Aldine readers (Newson); Baldwin's readers (American); Howe's readers (Rand-McNally); Nichols' arithmetics (Johnson-Blagden); Cyr's primer (Ginn).

Funk & Wagnalls Company, publishers of the Standard Dictionary, have recently begun a campaign in the state of Wisconsin for the repeal of a law compelling schools to use the Webster Dictionary.

Galena, Ill. Adopted Montgomery's United States History.

A bill for uniform books in all the public schools has been introduced in the Wisconsin state legislature. It aims at the formation of a state commission and free books.

Milwaukee, Wis. The board of school directors has adopted Ravenbyrne's new book on elementary hygiene, entitled "Good Health" for use in the fourth grades. This book is published by Ainsworth & Company, Chicago, and is now used in more than a thousand schools throughout the United States. The author, Mrs. Ervie M. Ravenbyrne, is the wife of Mr. Edward Ravenbyrne, the well-known school book man, who now represents Benzinger Brothers, New York City.

The Educational Department of San Juan, P. R., has officially adopted the following books published by Isaac Pitman & Sons, New York, for use in the schools of that city: "Isaac Pitman's Shorthand Instructor," "Isaac Pitman's Shorthand Dictionary," "Taquigrafia Espanola de Isaac Pitman," "Spanish Business Interviews," and Charles E. Smith's "Practical Course in Touch Typewriting."

The Old Testament Narrative.

By Alfred Dwight Sheffield. 507 pages. Price, $0.75. Houghton Mifflin Co., Boston, New York, Chicago.

In February, 1909, the National Conference on Uniform Entrance Requirements in English placed the chief narratives of the Old Testament at the head of its list for school reading. Its action followed a conviction, still growing, that the ignorance of the Bible common in our schools is not creditable to the community. The Old Testament stories are not only a source of continual allusion in other literature used at school; in the classic King James translation they are an abiding standard of taste and elevated feeling. It is part of the aim of this book to set them at an advantage for school use. The editor has assumed further, "that two considerations should be uppermost: (1) the translation of the Old Testament Narrative should do it justice as literature: (2) footnotes should give only such matters of fact as either explain the text or supplement it."

It is to be regretted that our public schools cannot use this book without grave offense. The reasons which are fatal to its adoption, are implied by the editor in his lucid preface from which quotation has been made. Any version of the Sacred Scriptures must lead to a controversy on texts, and notes of explanations are necessarily causes for religious contention. In itself the work has been excellently done. As the editor claims, it "offers substantially the entire Old Testament Narrative arranged in its due sequence as a history of Israel from the earliest times to the rededication of the temple by the Maccabees. Passages which in revised texts are duplicated it gives but once; parallel versions of the same tradition it gives together, setting the later or less interesting one in a footnote. "The book is in keeping with the uniform excellence of the Riverside series, and from a merely literary and pedagogic viewpoint, is far superior to the Bible histories now adopted in many sectarian schools.

NEW Books

The Story of Great Inventions.

By Elmer Ellsworth Burns, instructor in physics, Medill High School, Chicago. Harper & Bros., New York City.

The author of this fascinating and instructive book displays more than usual understanding of the kind of interest which the boy in his teens feels in scientific subjects. "The man," Mr. Burns writes, "is so absorbed in the present that he cares little for the past. Not so with the boy. He cares for the history of inventions, and in this he is wiser than the man, for it is only by a study of its origin and growth that we can understand the larger significance of great invention."

In "The Story of Great Inventions," therefore, the author has wisely combined the personal and romantic side of discovery and invention with accurate description, indicating also the economic conditions that led to each scientific advance and the changes that resulted from it. The book is written without condescension and in the full conviction that it will meet a real need, an active desire. It tells the story plainly, as man to man, and appeals directly to the inquisitive and enterprising spirit of youth. If, as G. Stanley Hall and others have stated, youth is pre-eminently the time in which to arouse enthusiasm for the history of human progress, Mr. Burns' task has been indeed a useful one. Certainly in few books has it been so adequately performed.

La Tour des Maures.
Un Saint.

By Paul Bourget. Edited by Cloudesly Brereton, M. A. L. Es. L.

Jack, Part I.

By Alphonse Daudet. Adapted and edited by Edward C. Goldbury, M. A.

The Macmillan Company has added the above volumes to their French Series. The editorial conception of this series is at once high and thorough. Each text contains sufficient matter for two terms' study, is interesting in its matter, literary in style, practical and useful in its vocabulary and instructive regarding the life and manners of the country to which it relates. Each introduction furnishes a short account of the author and his work.

The notes give in a clear and concise form such explanations as may aid in overcoming textual difficulties and in elucidating allusions—literary, historical, geographical and idiomatic.

An appendix contains word and phrase lists drawn from the reading and to be used in drill, *viva voce* exercises in syntax, founded on and involving the vocabulary of the text, composition and a chapter on word formation. The student thus gains linguistic knowledge, conversational ability and general culture which adds life and interest to the work of the class-room.

Alphonse Daudet and Paul Bourget—Ernest Daudet being eclipsed by his greater brother—require no introduction to the American readers.

They are the unrivaled masters of language and style. All that they write is imbued with sympathy and true artistic feeling which ennobles its subjects as it breathes into their nostrils the breath of life.

The word-perfect knowledge of the hundred pages of each of those three little volumes will provide such an outfit for the practical purposes of speaking and writing French as could not be easily obtained elsewhere in so small a compass and so interesting a manner.

Three Crimson Days.

By Harrison Patten. 67 pages. The Neale Publishing Co., New York.

Three Crimson Days by Harrison Patten is an unvarnished story of imposture. The author, who is a graduate of Northwestern and a fellow of Wisconsin University, has written a number of problem stories in addition to scientific papers, especially on chemical subjects.

Rosalynde.

By Thomas Lodge. 16mo. Cloth. 133 pages. Price, $0.35. Ginn & Co., Boston, New York, Chicago.

Edward Chauncey Baldwin, assistant professor of English at the University of Illinois, has added another important text to the Standard English Classics, published by Ginn & Co. Rosalynde was used by Shakespeare for As You Like It, while Sidney's Arcadia (1580), Barnes' The New Atlantis (1627), and Mores' Utopia (1516) were the precursors of our modern problem novels. Lodge's Rosalynde is the prototype of the English romance of today. The present text is unencumbered with notes, and is followed by a valuable series of questions on the introduction, the structure, the character, the settings, and the style.

Education, How Old the New.

By James J. Walsh, M. D., Ph. D., Fordham University School of Medicine. 470 pages. Price, $2 net. Fordham University Press, New York.

To the student of modern education, who believes that the greatest advances in educational theory and practice have been made during the past two or three decades, the first reading of this book will be a distinct shock. Dr. Walsh has for many years been an ardent student of the history of education, and he is thoroughly in sympathy with the struggles and achievements of the teachers of olden days, from Ptah Hotep to the University men of the middle ages. Not that he underestimates the value and the wonderful achievements of the new education, rather he holds that the modern educator has failed to understand and correctly estimate the significance and the influence of the pedagogical theories and the educational philosophy of earlier epochs.

The book is made up of lectures delivered before teaching bodies and contains some repetitions and inconsistencies that should be eliminated in future editions.

The chapters on "the first modern university" and "origins in American education" are distinctly valuable, because of the light they throw upon the earliest beginnings in higher education on the American continent.

The closing chapter entitled, "New Englandism," while out of place in the present volume, is a delightful bit of satire which could only be written by a man who has grown up under Yankee influences and understands all of the foibles of the typical New Englander. Incidentally some traditions about New England, many of which are set down in school histories as facts of great influence, are exploded.

As a whole, the book will be enjoyed by the student of the history of education. Its greatest value lies in its exposition of the value of school and university work of olden days.

Poetry for Schools.

Three books compiled and edited by Florence Holbrook. Cloth, price, 20 cents each. Charles E. Merrill Co., New York.

These books are intended to supply all of the poetry for reading, study and memorizing necessary in the elementary schools from the third to the eighth grades. Each book contains material sufficient for two years' work. Accompanying each poem are brief paragraphs suggesting the qualities for which the poem is distinctive. Through this informal study, the child is led to see beauty of diction and thought, the use of meter and figures of speech, and the spirit in which the verse should be read. Biographical sketches of the authors represented are given at the end of each book. While the suitability of some of the poems included in the third book may be open to criticism, the collection as a whole is well graded and carefully chosen.

Huxley's Autobiography and Selected Essays.

Edited by E. H. Kemper McComb, Manual Training High School, Indianapolis, Ind. 186 pages. Longmans, Green & Co., New York.

Professor Thorndike edits Huxley's "Autobiography and Selected Essays from Lay Sermons." The introduction is eulogistic rather than critical. The editor's part in the notes seems to have been taken rather indifferently. Such elucidations as: "*Grote, George*, 1774-1871, an English Historian," or *Horace*, 65 B. C.—8 B. C. a famous Roman poet; or, *pterodoctyl*, "*Flying Dragon*," leave one who looks to the notes for help, only a little less in the dark than he was. Then, too, such notes as the one on "ascetic" (page 178) and meta-physics (page 183) are inaccurate and misleading.

Cooper's The Deerslayer.

Edited by M. F. Lansing. 12 mo, cloth. 378 pages. Price, $0.65. Ginn & Co., Boston, New York, Chicago.

Seventy-five years ago the question was sometimes asked, "Who reads an American book?" The youth of our country and the pressure of its material needs were seldom remembered by the questioners. In creating the novel of Indian adventure, James Fenimore Cooper achieved personal distinction and freed his native land from an undeserved stigma, as his Leatherstocking Tales were eagerly read in England.

In this edition a mass of burdensome detail has been cut out, while the fine descriptions of natural scenery near Otsego Lake, the atmosphere of pioneer life, the picturesqueness of the Indian and the backwoodsman, and the integrity of the plot have all been retained. The book is a happy instance of abridgement. Extracts from the preface of Cooper, an analysis of the plot of the "Deerslayer" and a time analysis of the plot are found in the appendix.

Selections from the Riverside Literature Series.

For seventh grade. 256 pages. Price, $0.40. For eighth grade, 256 pages. Price, $0.40. Houghton Mifflin Co., Boston, New York, Chicago.

These two volumes are designed for the use of seventh and eighth grades. The selections are from the Riverside Literature Series—a synonym of rare excellence—and express the deliberate choice of the teachers, principals and superintendent now serving the public schools of Milwaukee.

Shakespeare's Midsummer Night's Dream.

By Rev. Henry N. Hudson. 128 pages. Ginn & Co., New York, Boston, Chicago.

The name of the editor has long been associated with fine Shakespearean scholarship. His general preface is an able argument for giving more time in our schools to the study of English literature. It is needed to counteract the influence of weak and wicked books. Large portions of the very best and fittest authors should be used; portions large enough for the pupils to become really at home with them. These authors should be so taught that pupils receive pleasure or else profit will not follow. The introduction skillfully handles different points of the charming play. The notes meet all suitable demands.

When America Became a Nation.

By Tudor Jenks. 294 pages. Price, $1.25. Thos. Y. Crowell & Co., New York.

The title suggests the scope of the book. A closer examination tells us the time covered is from 1789-1850, from the first year of Washington's presidency to the finding of gold in California. The main events of this formative period in our history are stated in a plain, clear fashion. Of the sixteen illustrations a sketch-map of the route taken by the Lewis and Clark expedition, "A Glimpse of the World," by F. C. Darley, two characteristic sketches from the pencil of Remington, are the most interesting.

Idealism in Education.

By Herman H. Horne. New York University. 177 pages. Price, $1.25, net. The Macmillan Company, New York.

This volume, whose secondary title is "First Principles in the Making of Men and Women," seems frankly agnostic. The author has gone to schools of modern philosophy for his doctrines and necessarily ignores the religious factor, at least as the dominant power in education, in the home as well as the school. His theories are therefore built on the rationalistic and purely natural in life. With his own masters he shows undoubted learning. He says truly that "the perfecting of humanity in the image of divinity, is idealism in educating"; but his enumeration of the duties of teachers in common with parents and all citizens, especially his declaration that "eugenics, eutopias and eunomias are the chosen means of the Divine Purpose in perfecting mankind," with this we cannot acquiesce for many reasons, natural as well as supernatural.

The Nibelungenlied.

By Daniel B. Shumway. 339 pages. Price, $0.75. Houghton Mifflin Co., Boston, New York, Chicago.

In the Riverside Classics the publishers are giving the school world a select library best fitted for the class room needs of American children. Mr. Shumway, who is professor of German philosophy in the University of Pennsylvania, has supplied an old want in this school text of one of the greatest of folk-lore epics.

A Dog of Flanders.

By Louise de la Ramee. 100 pages. Price, $0.25. Rand, McNally & Company. Chicago.

This new number of the Canterbury supplementary reader is edited by Rose C. Swart, supervisor of practice in the state normal school, Oshkosh, Wis. The introduction, written by Katherine Lee Bates, the general editor of the series, has the following able lines: "A practical people in a practical age, we need the grace of fable to balance our fact, the joy of poetry to leaven our prose. Something of the sort we are bound to have and if familiarity in childhood with the classic tone has not armed us against the cheap, the flimsy, the corrupt in fiction, we fall easy victims to the trash of the hour. We become the sport of those mocking elves who give dry leaves for gold." The Dog of Flanders is surely a classic which should be given to every child. Miss Swart in her biographical sketch of "Ouida," says: "She was so sympathetic toward all that were poor and oppressed that she was sometimes unfair to the prosperous and powerful. Her appreciation of the faithful labor of Patrasche for an unkind master led her to imply that all Flemings misuse their patient dogs. Her keen sense of such lonely poverty and struggling genius as Nello's made her feel that merit always goes undiscovered and unrewarded if found among the poor and the friendless. And this is sometimes true; but to magnify the cases in which it is so into a universal rule, is to understand the goodness of human nature and to plant bitterness and distrust in one's own heart."

It might also be stated that critics do not agree with "Ouida" on the greatness of Rubens; certainly his sacred paintings would not attract a normal child.

The Speech for Special Occasions.

By Ella A. Knapp. Goucher College and J. C. French, John Hopkins University. 395 pages. Price, $1.10 net. The Macmillan Company. New York.

The introduction of this book is an able exposition of rhetorical principles necessary for the making of a speech. Some of the speeches contained in the book are: In behalf of a cause, of a president, of commemoration or personal tribute, at the laying of a cornerstone or a dedication, of welcome, of an official representative. In itself it is a splendid volume on oratorial technique and memorable collection of classic orations.

MR. SCOTT DEAD.

Mr. Charles W. Scott, the oldest representative of the American Book Company in the state of Pennsylvania, died Friday, March 3rd, in his home at Williamsport, Pa. He had been in poor health for some time past, but had attended to his work from day to day until seized with a sudden sinking spell from which he never rallied.

Mr. Scott was born sixty-seven years ago in New York state, in the town of Plymouth, Chenango county. His ancestry was Scotch and settled in the town of Whatley, Mass., very shortly after the settlement of the colony. Mr. Scott was brought up on his father's farm and was educated at Norwich Academy. In 1875 he came to Williamsport, Pennsylvania, as general agent for Ivison, Blakeman & Company. When this firm was merged into the American Book Company he continued with the new house up to the time of his death.

In 1898 Mr. Scott was appointed postmaster of Williamsport by President McKinley. He served in this capacity until 1903 with much credit. It is said that he made many improvements in the conduct of his office.

Mr. Scott was widely known among the school people all over the state of Pennsylvania. His genial, good-natured and diligent application to the interests of his firm made it possible for him to work in the same territory with ever increasing business for thirty-six years. Mr. Scott's one recreation was politics. He was always a staunch Republican and contributed no small amount to the success of his party in Williamsport. He is survived by a wife, a son and a daughter.

Death of Mr. Jamison.

Mr. J. Miles Jamison, secretary of the Christopher Sower Company and one of the leading members of the educational publishing fraternity, died suddenly last month in his home at Philadelphia. While his duties kept him close to the office, Mr. Jamison was widely known among the school people in the eastern states and respected for his strong, manly personality and his high pedagogic ability.

TRADE NOTES

Adjustable Window Shades.

There has been an impression current among the school people of the country that all adjustable window shades were in reality window shade adjusters. By this it was meant that special fixtures were necessary to secure desired results. This impression is wrong. The shades manufactured by Oliver C. Steele Mfg. Company require no spring or parts, but automatically fold to one-seventh their length by one pull of the cord.

A visitor to the new high school at Gary, Ind., will find on examining this beautiful new building adjustable window shades in every room. They look remarkably simple and are operated by a mere touch of the hand. They were all made to order by the Oliver C. Steele Mfg. Company, of Spiceland, Ind.

The shades manufactured by this company are all made of canvas or ducking cloth, and they are the invention of Mr. Steele. Each shade is made to order and therefore fits like a tailor-made suit of clothes. The company has now a factory equipped with the latest machinery and is prepared to manufacture shades in large and small quantities. The fact that Mr. Oliver C. Steele, the inventor of the shade and president of the company, is making a specialty of school work should be of special interest to educational authorities who are equipping new or old schoolhouses.

Issues New Booklet.

R. R. Johnson, 154 West Randolph street, Chicago, Ill., has issued a new booklet entitled "Light Where You Want It: The Shade Where You Want It." It is by all odds the best book as yet published by this pioneer in the window shade field. It contains, besides a complete description of Johnson's window shade adjuster, hints on lighting and ventilating as applied to the use of adjustable shades, and numerous photographs of office buildings, hospitals and schools having complete installations of the Adjuster. School boards would do well to obtain copies for reference and filing.

Letters of Endorsement.

On another page of this issue of the Journal is a letter from H. F. Estill, principal Sam Houston Normal Institute, Huntsville, Tex., to Mr. John Hall, Jr., of the Springfield Sanitary Fountain Company. This is from one of the Texas State Normal Schools. The letter is of unusual strength and will prove of interest to all school officials.

It is only one, however, of the many this company now has in its offices endorsing the Springfield Sanitary Fountain. Here is another from the Isadore Newman Manual Training School, New Orleans. It reads:

January 21, 1911.

Springfield Sanitary Fountain Co.,
Chicopee, Mass.

Gentlemen: The Board of Directors of the Isadore Newman Manual Training School in New Orleans, Louisiana, installed your sanitary drinking fountains in the school last summer. I am pleased to say that they are giving universal satisfaction, and I unhesitatingly recommend this fountain to school boards.

Yours very truly,
C. C. Henson, Principal.

Letters in which renewal orders are enclosed are always very strong endorsements. Following is such a letter:

Bellingham, Wash., Nov. 28, 1910.

Mr. John Hall, Jr., Chicopee, Mass.

Dear Sir: Enclosed please find warrant for amount due you. Please acknowledge receipt, giving number of warrant. Also you may forward by freight twelve more same as sent. Yours truly, Wm. Asher, Secretary Board Education, Bellingham, Wash.

One of His Worst.

The professor's suburbanite host was explaining the untidy appearance of his barnyard.

"I have had to reopen an old trench," he said, "leading from my barn to the creek below. It had become clogged."

"H'mph!" grunted the professor, "this is the first time in your history as a farmer that I've known you to practice retrenchment in any form."

A Practical Mind.

The teacher was endeavoring to give the class some idea of the greatness of this country in a commercial sense. "Take the egg product alone," she said. "It is estimated that if all the eggs produced in the United States last year were loaded into one railway train, when the engine was pulling into Newark, New Jersey, the caboose would just be leaving Davenport, Iowa.

"This seems hard to realize," she continued, "but the statistics are compiled by a well known authority."

A little boy raised his hand.

"What is it, Donald?" asked the teacher.

"I don't believe it's true, Miss Adair," he said, "one engine couldn't pull that train."

In the Country.

Farmer—Yep, our section of the country is growing fast, and we're mighty proud of it.

City Man—That so? Have a good school?

Farmer—Wal, no. Y'see our school house burned down two years ago and we ain't got 'round yet to building a new one—but we've got twenty-three automobiles in the township.

Wahrscheinlich Nicht.

Oberlehrer—"Weshalb lachen Sie, Schmidt?—Wohl gar ueber mich?"

Schmidt—"Nein!"

Oberlehrer—"Na, ich wueszte nicht, was sonst noch Laecherliches hier waere!"

A Conservative Position.

An applicant for the post of mistress in a country school was asked, says a writer in the Rural World, what her position was with regard to the whipping of children.

She replied: "My usual position is on a chair with the child held firmly across my knees, face downward."

He Knew.

The pretty teacher was trying to explain the difference between good conduct and bad. "Good actions," she explained, "are the lovely flowers. Bad ones are the weeds. Now can any little boy or girl tell me the difference between flowers and weeds? What are flowers? What are weeds?"

"Weeds," said Walter, who had been struggling with the sorrel in his mother's garden, "are the plants that want to grow, and flowers are the ones that don't."

Encouraging the Spirit of Inquiry.

"Papa."

"What is it, Theobald?"

"May I ask you a question?"

"Certainly you may, my child. It is only by asking questions that we can improve our minds and prepare ourselves for our work in the world. I am glad to note a spirit of inquiry in you, and I hope you may never arrive at the place where you think you know it all and cease to solicit information from others. What is your question, my son?"

"I forget, papa."

A young lady who taught a class of small boys in the Sunday school desired to impress on them the meaning of returning thanks before a meal. Turning to one of the class, whose father was a deacon in the church, she asked him:

"William, what is the first thing your father says when he sits down to the table?"

"He says, 'Go slow with the butter, kids; it's forty cents a pound'," replied the youngster.

Knew Why.

Teacher—Why are cows, horses, pigs, chickens, called useful animals?

Boy (son of a village lawyer)—Because, my father says they make so many fights between neighbors.

"Mr. Gibbons," said the teacher of the class in rhetoric, "point out the absurdity in this figure of speech: 'At this time the Emperor Frederick hatched out a scheme,' etc."

"It seems to me all right," replied the young man, after some reflection.

"It does? Explain, if you please, how he could have 'hatched out' a scheme."

"Well, he might have had his mind set on it."

Probably Correct.

Teacher: What is a hero?

Boy (whose mother is a suffragette): I guess it is a married man.

April First.

The old master knew all about "cribbing" as a schoolboy and had not forgotten the little tricks and dodges. One day, during an examination, the keen-eyed teacher observed one of his pupils take out his watch every minute or two. The pedagogue grew suspicious. Finally he strode slowly down the aisle and stopped in front of Willie's desk. "Let me see your watch," he commanded.

"Yes, sir," was the meek reply.

The teacher opened the front of the case. He looked somewhat sheepish when he read the single word, "Fooled." But he was a shrewd man. He was not to be thrown off the scent so easily. He opened the back of the case. Then he was satisfied. There he read, "Fooled again."

Neck and Ears Today?

"How does it happen that you are five minutes late at school this morning?" the teacher asked, severely.

"Please, ma'am," said Ethel. "I must have overwashed myself."—Everybody's.

The Eternal Wrangle.

The Doctor (through the telephone).—Yes, I'll tell you all about it, but I'll have to look it up. Will you hold the wire a minute?

The Professor (with evident irritation)—Won't it do just as well if I hold the receiver?

Consistency.

Miss Grammar—"It seems to me that your principal is not of a very even temper."

Miss Kindergarten—"Oh, he certainly is. He growls the whole time."

PROBLEMS OF SCHOOL PLANNING

(Continued from Page 23)

studied and tested as is necessary to enable the architect to plan economically and intelligently.

Cost of Secondary Education.

Until this is learned we cannot provide secondary education on an economical basis. At the risk of repetition it is well to state again that in Boston the building for a high school pupil costs three times that for the elementary. When the ninth grade was put into the high school it meant providing quarters worth $500 apiece instead of quarters worth $175. In 1905 Boston had 7,500 high school pupils, in 1910 she has 15,000.

The cost of the buildings is but a small part of the cost of secondary education. It is imperative, if we are to keep within bounds, that the secondary schools should receive the careful study that has been given to the elementary.

Summary.

Our problem then, to review briefly, is to determine what is necessary for the complete well-rounded education of the child, as proper to be furnished without cost. Throughout the country both elementary and secondary education is being made attractive, courses are offered to tempt children to work—work is made play to insure its being done.

One is inclined to doubt whether this is altogether wise. The children when they grow up must have the power of concentration and the will to do those things that are not agreeable. The discipline of the Latin grammar was not without its value; and discipline, order and obedience, mental and physical, is what is most needed.

Determine what is necessary for the child to learn and what tools will best insure results. Determine the plan which will meet these needs most compactly, in orderly fashion, and with the beauty that comes of order. Determine the material with due balancing of initial cost and cost of maintenance, working with sound, durable and suitable material, having the beauty of honest workmanship. Plan for the most complete use of the plant, so that returns may fully justify expenditure.

These are a few of the modern problems involved in economical school building, not simple ones, but complicated, far-reaching and extremely difficult to solve. The teacher has been given little opportunity to mold the course of school planning. It is the teacher who, coming into touch with the pupils, knows most about the needs of education and the results obtained. It is the teacher who will put the impress of the individual on each member of the class and make or mar that plastic material, the child.

It is to the teacher, the master, the superintendent, that we must turn for wisdom in guiding the course of our schools. On the course of our schools rests the well being, the knowledge and the competence of succeeding generations, and that is the future of our country.

COMING CONVENTIONS.

April 6-7-8. Southeastern Iowa Teachers' Association at Keokuk. Frank L. Smart, Davenport, president; Supt. William Aldrich, local committeeman.

April 5-6-7. Northern Minnesota Teachers' Association in St. Cloud. T. A. Erickson, president, Alexandria.

April 5-6-7. Southwestern Nebraska Education Association at Oxford, Neb.

April 6-7. West Central Nebraska Teachers' Association at Lexington. D. F. Dickinson, president, Lexington, Neb.

April 6-7-8. Louisiana State Teachers' Association at Lake Charles.

April 12-14. Alabama Educational Association. Supt. Arthur F. Harman, President, Selma, Ala.

April 13-14-15. Eastern Commercial Teachers' Association at Bridgeport, Conn.

April 13-15. Middle Tennessee Teachers' Association, at Nashville. Mr. J. D. Jacobs, president, Murfreesboro, Tenn.

April 21-22. Central Missouri Teachers' Association at Boonville.

April 22-28. International Kindergarten Union at Cincinnati.

April 28-29. Semi-Annual Convention, Wisconsin School Arts and Home Economics Association at Appleton. Miss Lucy Dorrit Hale, president, Milwaukee; T. S. Rees, secretary, Racine Exhibits.

May 11-12-13. Eastern Art and Manual Training Association, in Philadelphia. Miss Ada B. Williams, secretary, 7619 Lexington avenue, Cleveland, O. Exhibit of pupils' work.

June 5-6-7. Conference on the Education of Backward, Truant, Delinquent and Dependent Children, at Boston. E. L. Coffeen, secretary, Westboro, Mass.

June 15-16-17. West Virginia Teachers' Association at Bluefield, W. Va.

June 27-28-29. Kentucky Education Association at Owensboro. T. J. Coates, president, Richmond.

June 20-21. National Society for the Study and Prevention of Tuberculosis at Denver. Philip P. Jacobs, assistant secretary, New York city.

June 26-7-8-9. Catholic Education Association at De Paul University, Chicago. F. W. Howard, secretary, Columbus, O.

June 27-8-9. Kentucky State Education Association in Owensboro. T. W. Vinson, secretary, Frankfort.

July 8-14. National Education Association, in San Francisco, Cal. Mrs. Ella Flagg Young, president, Chicago; Irwin Shepard, secretary, Winona, Minn.

June 19-30, July 1. American Institute of Instruction at Providence, R. I.

July 14-15. Illinois Country Teachers' association at Normal.

April 6-7-8. Southern Illinois Teachers' association at Carbondale.

May 5-6. Illinois Superintendents' and Principals' association at De Kalb.

LIGHTING AND VENTILATION OF SCHOOLS.

(*Concluded from page 19*)

There seem to be few schools in which proper provision is made for warm weather ventilation. Scientific principles have not here been applied. Windows are generally relied upon entirely, though the same objections that have been made against reliance upon them in winter hold with almost equal force for summer ventilation. The draughts are not so serious, but the very slight difference in temperature between indoor and outdoor air cannot be relied upon to change the air frequently enough. Rooms with exposure to sun's rays must have their windows covered with curtains which rattle and hinder movement of air. "Close" air in schools in mild, heavy weather is notorious.

Provisions are made in the Elm Street school to introduce in warm weather cool, fan-driven air at the floor and to exhaust the warmer air above through well-distributed openings in the ceiling glass and through ventilators on the skylights to the outside. Windows may perhaps be used as auxiliary means, but reliance upon them is avoided.

Educators and teachers all admit that little is accomplished by the children when the mercury registers 80 degrees and above, but public sentiment prevents sending the children home on such hot days. Some method of chilling the air may be introduced eventually. Economy of time, educational opportunity and taxes demand it. The ventilation scheme in this building is admirably suited to such a plan. In the judgment of those who have visited it, this school is pronounced the best lighted and ventilated school in this section. At any rate its novelties, most of which are original with the local authorities, merit careful investigation.

HUGHES HIGH SCHOOL.

(*See page 1*)

The new Hughes high school completed last year is a magnificent example of Tudor Gothic architecture in red brick and ivory tinted terra cotta. It is truly an embodiment of the highest ideals in American secondary education in that it provides an ideal structure with an ideal equipment for a cosmopolitan school, embracing an academic course, a commercial course, a manual training course, a domestic arts course, an industrial course for girls, an industrial course for boys and an art course, each consisting of four years' work.

The building measures 280 by 220 feet and is fireproof throughout. A faint idea of its size may be indicated when it is said that the extent of the corridors is nearly a mile. It will accommodate 1,600 students for regular daily work and cost $676,000, approximately, for the building and $80,000 for furnishings and equipment. This cost is remarkably low and figures at only 14.7 cents per cubic foot, or $422.50 per pupil for the building and $50 per pupil for equipment.

In addition to a lobby forty feet square, provided with foot-warming and drying apparatus for the pupils as they enter, the first floor contains, in the center, two gymnasiums, with shower and plunge baths at the side. Each gymnasium measures 112x75 feet. To the left is a suite of domestic science rooms consisting of kitchen, dining room, bed room, laundry, and domestic science laboratory; also the girls' lunch room, serving kitchen, and boys' lunch room. In the annex at the rear are rooms for manual training, rooms for woodwork, pattern-making and a machine shop, each 48 by 40 feet, a foundry 75 by 44 feet, and a forge room 48 by 48 feet, each with lockers, lavatory, tool supply room attached. This annex is shut off from the main building to keep noise and vibration from disturbing classes at study. In the basement beneath is the steam heating plant, the ventilating fans and the plenum rooms.

The second floor contains in the center the auditorium, seating 1,700 persons. This room, which has a balcony on the level with the third floor, is flanked on either side by an open light court, 80 by 33 feet in size. On the right of the entrance, are rooms for teachers, emergency room, reception room, storage rooms, and five recitation rooms. There are lavatory and locker rooms at the head of each stairway on this floor. On the left are offices for principal and assistant, botanical laboratory, lecture and preparation rooms, and a zoological laboratory, lecture and storage rooms.

In the manual training annex at the rear, are two drafting rooms for mechanical drawing, two rooms for woodwork, each 40 by 58 feet, and large storage rooms for materials.

The third floor contains over the lobby below a library, ten recitation rooms and two large study rooms, one on each side.

The top floor has a corridor, like the floors below, running around the central light court. At the front there is a laboratory for commercial and economic geography; to the right rooms for commercial arithmetic and accounting, stenography and typewriting, bookkeeping, freehand drawing, art room and music and club room; to the left three recitation rooms, physical and chemical laboratories, lecture rooms, etc.

The tower room, forty feet square, is intended for the school museum.

The plans reproduced in this issue are printed through the courtesy of Superintendent Frank B. Dyer.

Howard A. Gass, publisher of the Missouri School Journal and for two years superintendent of public instruction for his native state, has been elected president of the Merchants' National bank of Jefferson city.

Fresno, Cal. Scientific dairying has recently been introduced in the local high school.

Among Bookmen

ONE ON THE MAJOR.

Major Albert W. Clancy, who looks after the business of the American Book Company in Minneapolis, several years ago addressed the children of one of the local schools on Abraham Lincoln. The occasion was the martyr president's birthday, and the major, who is a civil war veteran and a great admirer of Lincoln, was thoroughly in his element.

The school building happened to have no assembly room and Mr. Clancy was in consequence forced to repeat his talk a number of times. This gave an opportunity to adapt the address to the grade and age of the children so that all understood it perfectly.

In one room where two second grades were crowded together Mr. Clancy introduced his subject by writing upon the board in large, bold characters the number 99, Lincoln's age.

"Now, children," said he, "can any boy or girl present tell me what those figures mean?"

The major repeated his question several times with an appeal that any little boy who had an idea speak up.

Finally a hand went up timidly.

"Well," said Mr. Clancy, "I am pleased to see that one boy knows. Speak up, little man. What does the number mean?"

"Mister," said the boy, "that means how old you are."

AMONG BOOKMEN

Mr. John P. Kennedy continues to represent Silver, Burdett & Company in California.

Mr. B. S. Lobdell has recently joined the Pacific coast agency of Silver, Burdett & Company.

Mr. Macurda, who represented Silver, Burdett & Company in California, has resigned to take an important position in the state normal school at Los Angeles.

Edwin P. Craig is the southern manager of Atkinson, Mentzer & Grover. His offices are located at 422 Main street.

Mr. Caspar W. Hodgson, president of the World Book Company, recently visited California in the interest of the Ritchie-Caldwell hygiene text book. The book was adopted.

Mr. Frank Robinson, formerly of Rand, McNally & Company, now represents Silver, Burdett & Company in Washington and Oregon. He makes his headquarters at Everett, Wash.

Mr. H. M. Cummings continues to represent Benj. H. Sanborn & Company in southern Missouri and Arkansas.

Mr. C. M. Morris, formerly in Kentucky, has become state manager of Arkansas for the American Book Company. He succeeds Mr. Tom Murray, who has gone into the hotel business in Little Rock.

Mr. C. R. Foster, who looks after the interests of Benj. M. Sanborn & Company, recently took part in the New Mexico territorial adoption.

J. Reeder Fortney, one of the veteran bookmen of the state of Ohio, died at Wyoming, Ohio, on March 6th. Mr. Fortney began his career with the old house of Van Antwerp, Bragg & Company, and later upon the formation of the American Book Company, was given important territory in southern Ohio.

Mr. S. D. Thompson, formerly principal of the high school at Asbury Park, N. J., has joined the New York agency staff of Houghton Mifflin Co. Mr. Thompson succeeds Mr. H. H. Bailey, resigned.

Mr. Norman S. Heston is one of the new agents for the Educational Department of J. B. Lippincott Co. He resides in Philadelphia.

Mr. Charles Madson, Racine, is the Wisconsin representative for J. B. Lyons & Co. Mr. Arthur Huebsch, who formerly covered this territory, has been doing inside work in the Chicago office of the firm for some time.

Mr. J. P. Kennedy of the Pacific Coast agency of Silver, Burdett & Co., has changed his headquarters from San Francisco to Los Angeles.

Mr. Geo. S. Atwood, formerly with the Philadelphia office of Silver, Burdett & Co., has accepted a position with Allyn & Bacon. He resides in New York.

The Macmillan Co. has recently extended the jurisdiction of its New York office to include New England. The Boston office will be continued as a distributing center, but the field men will be controlled by Mr. A. W. Richardson, manager in New York.

Eaton & Co. have recently added Mr. E. B. Heiney to their corps of agents. Mr. Heiney travels in the west and makes Chicago his headquarters.

The Eastern interests of Eaton & Co. are ably represented by Mr. W. H. Martin of New York City.

Mr. W. B. Dove of Columbia, S. C., has recently joined B. F. Johnson Publishing Co.

Mr. J. J. Faulkner, of East St. Louis, for many years agent for the American Book Co., in southern Illinois, resigned in December and on January 1st engaged in the real estate business, being directly interested in selling fruit lands in the Bitter Root Valley of Montana, with his residence still at East St. Louis.

Mr. T. P. Murrey, of Little Rock, Ark., withdrew from the agency work of the American Book Co. and engaged in the hotel business, having purchased Gleason's Hotel, one of the leading hostelries of Little Rock. In his new business he is doing well.

Mr. C. E. Morris, formerly agent of the American Book Co., in western Kentucky, succeeded Mr. T. P. Murrey, of Little Rock, as agent for the American Book Co., in the state of Arkansas.

The Editor's Mail

New Orleans, La., March 6, 1911.

To the Editor,

THE AMERICAN SCHOOL BOARD JOURNAL.

Inasmuch as Mr. C. C. Henson, principal of the Newman Manual Training School of this city, has seen fit in the January number of your journal to enlighten the school people of our country concerning the school board controversy in New Orleans, and inasmuch as, unintentionally or otherwise, he has done me an injustice in giving the impression that I was the representative of the ward "system" and that the mayor of the city, inspired by patriotic motives and a laudable desire to remove the schools from the unhealthy influence of ward politics, used his influence against me, I beg the privilege of your columns for a brief statement of the true conditions that prevailed in the election of the successor of the late lamented superintendent of the public schools of New Orleans, Hon. Warren Easton: During the illness and at the time of Mr. Easton's death, I was administering the affairs of the school system, and for nine years had been assistant superintendent in charge of the secondary schools and the grammar grades of the elementary schools. Before the interference of the mayor, I was the untrammeled choice of the board of directors as the successor of Mr. Easton, was indorsed by the Presidents' Co-Operative Parents' Club, by three of the four daily newspapers of the city, and was, and am now, the president of the New Orleans Educational association, composed of the public school teachers of New Orleans.

At the time of Mr. Easton's death, the mayor, in company with the governor of the state, was in Pittsburg boosting New Orleans as the site for the Panama Exposition. On his return, he announced that a "big man" must be placed at the head of the school system, and that neither Mr. Bauer, the other assistant superintendent, nor I was big enough for the position. The big man intended proved to be Mr. James B. Aswell, former state superintendent of education and now president of the State Normal School at Natchitoches. Mr. Aswell, in his splendid educational campaigning as state superintendent, had developed a large political following and had long been considered ambitious to become governor of the state. The political move of the mayor and the governor was to make Mr. Aswell superintendent of the city schools at a large salary, placate him for the political injuries heaped upon him, and thus remove him as a troublesome political factor in north Louisiana. Mr. Aswell came to New Orleans and the mayor and his political allies appealed to the school board to forsake me and support him. The mayor called in secret conference to his office at the city hall as many members of the school board as he could corral, had the city attorney preach a eulogy on Mr. Aswell's greatness and qualifications for the city superintendency and begged them for the sake of administration to support Mr. Aswell. When Mr. Aswell realized the condition of affairs, and the methods that would have to be employed to elect him, he announced through the press that he was not a candidate. Mr. Aswell being eliminated, the mayor was without a candidate. He tried to induce Prof. James H. Dillard of the Jeannes Fund and Prof. Alcee Fortier of Tulane University to be candidates, but neither of these gentlemen would permit his name to be used before the school board. Finally, as a last resort the long sought for big man was produced in the person of Mr. Joseph Marr Gwinn who consented to be the candidate of the mayor, in other words, the candidate of the political machine, at a salary of $5,000 a year, the salary of former Superintendent Easton having been but $4,000 a year.

To elect Mr. Gwinn it was necessary to change the votes of at least three of the ten members of the school board who were already pledged to me, and the whole force of the political machine, city and state, was dedicated to that purpose. Every method known to ring politics was exerted upon the members of the school board. The resignation of one of the members of the school board who refused to vote for the mayor's candidate was secretly wrested from him, sent to the governor of the state and on the night of the election a new member, a clerk of the city council and a former poolroom employe, appeared with his commission to do his duty by the machine. Three other members were forced into line, and the vote stood, Gwinn 8, Conniff 6, Bauer 1.

Two mass meetings of indignation were held by the citizens of New Orleans; one by the women of the city, the other by the men, protesting against the corrupt political methods employed in the election of Mr. Gwinn, appealing to his sense of honor not to accept the position, and condemning the mayor and the political machine for interfering with the schools. The following resolutions adopted at the mass meetings and printed in the newspapers show conclusively the feeling of the people of our city:

Resolutions adopted at mass meeting of Co-Operative Presidents' Club in Athenaeum, November 16, 1910.

We, the parents of the pupils of the public schools of this city, in mass meeting assembled, most emphatically protest against the methods employed in electing Prof Joseph M. Gwinn superintendent of the public schools of this city.

We sincerely deplore and most emphatically condemn the methods employed by the mayor and those members of the school board who supported him in the recent election of a successor to the late Hon. Warren Easton.

We enter a most emphatic protest against the reorganization of the school board as proposed by the mayor, feeling that it will still further plunge our school system into politics.

Therefore be it resolved, That the secretary of the Co-Operative Presidents' Club is hereby instructed to communicate to Prof. Joseph M. Gwinn that his election to the superintendency of the public schools of this city is tainted with political trickery and petty ward heeler manipulation, respectfully requesting Prof. Joseph M. Gwinn to consider carefully the fact that he will retain the respect and confidence of the parents and pupils of this city, who will delight in honoring him, if he proves himself worthy of the great university of which he is a respected member, by resigning the position of superintendent of the public schools of this city.

Be it further resolved, That the secretary be instructed to communicate to his excellency, the governor of this state, the fact that Mr. Frank J. Owens does not enjoy the respect and confidence of the parents and pupils of this city, and that the educational system of this city is impaired by his appointment to the school board, requesting the governor of this state to recall the appointment or request Mr. F. J. Owens to resign as a member of the school board.

We call upon the manhood of New Orleans to arise and assert itself, to call a general mass meeting and to find ways and means to free our school system from the pernicious grasp of politics into which it has unfortunately fallen.

Resolutions adopted at mass meeting in Athenaeum, November 26, 1910.

"Whereas, when recently a vacancy occurred in the office of the superintendent of the public schools of the city of New Orleans, through the death of the Hon. Warren Easton, and it became then the duty of the school board to elect a successor, the Hon. Martin Behrman, as mayor of the city of New Orleans, and ex-officio member of the school board, interfered with the free exercise of judgment of said board, and by means, which were thoroughly reprehensible, compelled the said board to elect as superintendent one who was not their choice or selection, and to pass by a man whom they were disposed to elect, and who was eminently qualified for the position; and,

"Whereas, the Hon. Martin Behrman, in order to insure carrying out of his will in this matter, did procure and induce the resignation of one member of said board, and did recommend and procure the appointment by the governor of a successor to the resigning member of a man who was utterly unfit from every point of view to fill the position of a member of the school board; and,

"Whereas, the Hon. Jared Y. Sanders, governor of the state of Louisiana, aided and assisted the mayor in thus forcing the board to act contrary to their wishes and judgment, and at the request and recommendation of said Mayor Behrman, appointed as a member of said board a person whom he knew to be unfit and whose sole qualification for the position to which he was appointed was that he could be depended upon to vote as he was directed; and,

"Whereas, the precedent set in this matter may, and probably will be, followed to the entire subversion of the freedom and independence of action of all the boards of this city, whereby the mayor and the governor will succeed in usurping the

powers of said several boards and in substituting their own wishes as autocratic and irresponsible rulers, in place of the legally constituted authorities; therefore be it

"Resolved, That we, in mass meeting assembled, do most emphatically censure and condemn in the strongest terms the aforesaid usurpation and abuse of authority by the mayor, and the assistance given therein by the governor as tending to destroy the freedom and independence of the school board of New Orleans, and as a step toward the destruction of the rights and legal authority of all the boards of this city in the exercise of the powers vested in them by law; be it further

"Resolved, That we do hereby ratify and approve the resolutions adopted at the meeting called by the presidents of the Mothers' Club on November 16, 1910; be it further

"Resolved, That the senate of the state of Louisiana is hereby requested not to confirm the appointment of Mr. Frank Owens as a member of the school board of the city of New Orleans, if the governor persists in sending that appointment to them for confirmation; be it further

"Resolved, That copies of these resolutions be sent to the Hon. Martin Behrman, mayor of the city of New Orleans, and the Hon. Jared Y. Sanders, governor of the state of Louisiana, and that they be notified to amend their ways, or take the consequences."

The columns of the daily newspapers, published at the time, editorials, cartoons, letters from the people, resolutions adopted by civic organizations, unmistakably voice the people's condemnation of the mayor for his course and of Mr. Gwinn for his acceptance of the position.

The responsibility for the present organization of the school board, seventeen men from seventeen wards, all elected at the same time for a period of four years, rests upon the mayor and the political machine. The object of this legislation is evident and the logical result is that the public schools of New Orleans are under the absolute control of the ward machine with Mr. Gwinn, its duly elected representative, at their head. Mr. Gwinn is superintendent of public schools, but the livest issue before the people of New Orleans is the school question.

The above are the facts in the case, and I ask you to give them the same publicity you accorded Mr. Henson's view of the situation.

JNO. R. CONNIFF.

NEW HIGH SCHOOL, SUPERIOR, WIS.

(*Concluded from Page 10*).

three domestic science rooms, two lecture rooms, three drawing rooms, two commercial study rooms, a lunch room, a sewing room, a library, study hall, teachers' rooms, principal's office, etc.

The auditorium, which is on the main floor and extends up through the second floor, is pronounced by many visitors to be the best arranged and most beautifully decorated school auditorium in the northwest. The room has a seating capacity of 1,200 and is provided with a stage and dressing rooms large enough for school entertainments and amateur theatricals.

Underneath the auditorium and occupying the same amount of floor space is a gymnasium, the walls of which are of gray pressed brick. On either side of the room are shower baths and dressing rooms for boys and girls. The gymnasium has a suspended running track and a spectators' gallery.

The heating system consists of a steam plant, with mechanical ventilation and supplementary direct radiation.

The rooms in the building, with the exception of the manual training rooms and the gymnasium, are hard plastered and finished in white oak.

The building is equipped with an intercommunicating telephone system, thermostatic heat regulation and the latest type of sanitary plumbing fixtures.

Oxford Graded School Building.

(*See cuts page 23*)

The new school building at Oxford, N. C., which is now rapidly nearing completion, is built of red brick laid in dark brown mortar and trimmed with granite. The basement is made damp proof and is finished with a concrete floor.

The first floor contains six grade class rooms, cloak rooms, a library and an office for the superintendent. The corridors on this floor have been planned to be 15 feet wide.

The second floor contains four class rooms and an auditorium. As an added precaution against dangers of fire and panic, two iron stairways have been provided, leading from the second story to the ground. The roof of the building is supported on steel trusses and is covered with slate.

The interior finish is in the Mission style. The woodwork is pine, and the plaster is gypsum with sand finish. The blackboards are hyloplate.

The heating and ventilating plant delivers 30 cu. ft. of fresh air per minute, per pupil, to each class room. Heated vent flues are provided to remove the vitiated air. The plumbing is of the latest standard sanitary make.

The cost of the building is $25,000, complete. The architects are Linthicum & Rose, Durham, N. C.

Omaha, Neb. The school board has created the office of custodian of supplies with a salary of $125 per month. The new official will be directly responsible for the purchase, storing, delivery and inventory of all books, furniture, apparatus and materials used in the schools.

The school board of Zanesville, Ohio, has recently discussed the feasibility of enforcing simpler dress at the graduation exercises of the high school. Caps and gowns have been suggested as one solution and the prospective graduates have been requested to be moderate in the expenditure for frocks.

IRON RIVER SCHOOL.

(Concluded from Page 20)

pressure boilers, a water heater and a vacuum pump for drawing air and water from the radiators and pipes of the heating system. The boilers are arranged so that they can be operated separately or in unison. A 60-ton coal bin is directly under the sidewalk and also an ashpit, equipped with an elevator for lifting the ashes to the street.

The heating system consists of a direct vacuum steam plant with fan ventilation. Air is supplied to each room by two motor-driven fans located in the basement. The fresh air intakes are carried up to the second floor, directly below the eaves of the roof, to avoid dust and impurities in the fresh air. The system is guaranteed to furnish thirty cubic feet of air per minute for each pupil in each class room.

The foul-air vents lead from every room into the attic, where they are connected by means of galvanized iron ducts, with a large ventilator in the cupola. The entire heating system is regulated by means of Johnson automatic thermostats, which govern not only the radiators in the class rooms, but also the cold and warm air dampers in the fresh air ducts.

Johnson humidostats and humidifiers have been installed in the assembly room and in the plenum chambers, respectively, so that the moisture in the air of the building is also regulated automatically.

The entire building is wired for electric light and power. Special precautions have been taken to make the electrical equipment easily controlled by the principal and janitor. Every precaution has been taken to guard against the danger of fire from the wires. The power cables supply current for the ventilating fans, the vacuum cleaner and also for the experimental laboratories.

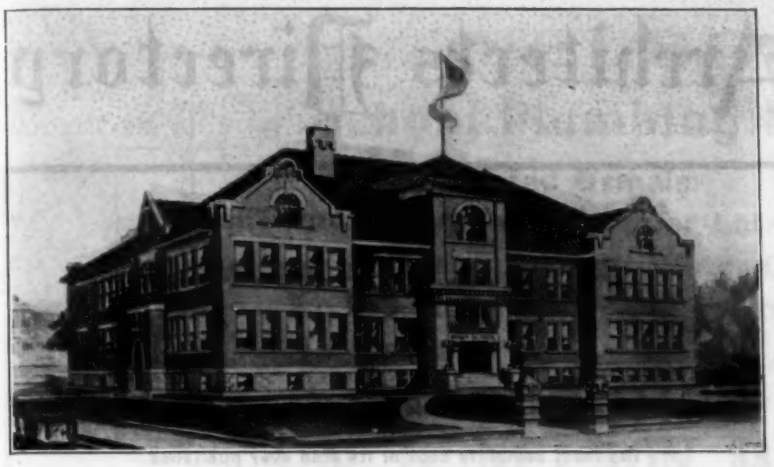
Precautions have been taken to provide against fire and to provide ample exits in case of emergencies. By locating the heating plant in an outside building the danger from fire is reduced to a minimum. However, chemical fire extinguishers are hung in the halls and the basement, and there are coils of large fire hose connected with a stand pipe, in each corridor and in the attic, so that a stream of water may be had at a moment's notice by the simple turning of a valve. There are fire alarm gongs in both upper and lower corridors which can be rung from the basement or either floor, and there are six double door exits and six wide stairways leading from the upper to the lower floor, so that the building can be cleared of pupils in a very short time.

The sanitary equipment of the building is especially complete and has called forth the strongest commendation from educators and sanitary experts who have visited it. Every precaution has been taken in the construction to select materials which are sanitary and which can be kept absolutely clean and will not be unhygienic in use. Thus the floors and stairways have sanitary coves; the interior wood trim is absolutely plain, without unnecessary grooves or projections that may catch dust. The building is equipped with a stationary vacuum cleaning machine, located in the basement and connected with each room by means of special piping. The plumbing equipment is of the latest type, specialy adapted for school use, and includes sanitary drinking fountains. Each of the lavatories are equipped with liquid soap dispensers and paper towels. It is planned to later install baths in two rooms in the basement, water and sewer connections for which have already been made.

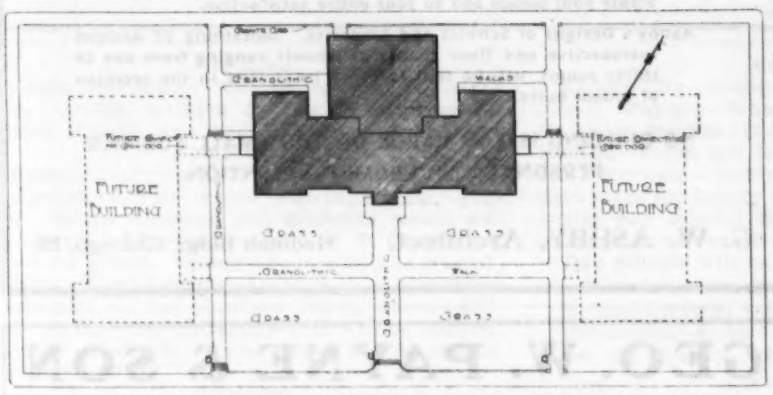
More remarkable than its physical equipment is the arrangement of the building for the many varied uses to which it can be put. The entrances and exits, for example, have been arranged so as to keep entirely apart the high school pupils, the grade pupils and the primary and kindergarten pupils. For the first named, the two main entrances in the middle section of the building are provided. This portion of the building is devoted almost entirely to the high school and is so arranged that the students will practically never come into contact with the remainder of the school. The boys and girls of the grades enter the building at the opposite ends of the long main corridor. Each of the vestibules which they use is provided with foot-warmers. The two entrances at the front of the wings are especially provided for the kindergarten and primary rooms.

The entrances and exits are also arranged so that the main study-hall can be used for evening lectures and entertainments without opening the entire building and without heating more than the main assembly hall. A night school can be conducted in one of the wings of the building without interfering with such lectures or entertainments. In fact, every possible use to which a school building can be put in a small community has been arranged for in this building. After a very thorough examination of the building, Dr. A. E. Winship, Boston, made this statement: "You have the most complete school building I have seen. You have many things here that no school building in the world had five years ago. Some school buildings have some of the things you have, but no school building has all as complete as you have.

The architect of the building was Mr. John D. Chubb, Chicago. The cost of the building was $96,000.



PROPOSED HIGH SCHOOL, ALBANY, ORE.
C. H. Burggraf, Architect.



PLOT PLAN OF THE WILLIAMS SCHOOL, CHELSEA, MASS.

VOCATIONAL EDUCATION.

(*Concluded from page 33*)

dependence of their weal and woe from the weal and woe of all others, the influences of corporations, associations and labor unions upon the social relations of the body politic, all these and other factors in the make up of our complex civilization tax the intelligence, the character, the technical knowledge, the economic scrutiny, the patriotic self-sacrifice of the mass of citizen and industrial workers, even more than the purely material aspect of the application of mechanic-technical knowledge to one's daily occupation as a means for earning bread and butter. Hence the importance of recognizing in our scheme of industrial education the civic-ethical element in connection with the economic-technical element. Either one alone is not sufficient to meet all the requirements of modern complex civilization and the civic and vocational duties of life, but both together will fulfill the claims and functions of progressive and effective industrial education.

HYGIENE EXPOSITION.

Announcement has recently been made of an international hygiene exposition to be held during the year 1911 in Dresden, Germany. Preparations have been made for more than a year and there are indications that the exposition, which is the first of its kind, will be immensely successful from a scientific and sociological standpoint.

An important section of the display will be devoted to school hygiene, the physical care of children, school gymnastics, play, etc.

In the section devoted to school hygiene, it is proposed to gather plans, models and photographs of school buildings in Germany and in other countries. Exhibits are to be made of such special items of school construction as orientation, drainage, sanitary building materials, arrangement and equipment of gymnasiums, corridors and stairways, hygienic drinking fountains, plumbing installations, school baths, etc. Data is to be gathered for standards of planning classrooms, particularly dimensions, natural and artificial lighting, decoration, heating and ventilation and furniture. The subject of cleaning schools with the help of dust-binding oils and vacuum cleaning is to be given attention.

A special section will be devoted to the hygiene of school instruction and collections will be made of model programs and of statistics on the length of class periods, daily programs, home study, fatigue, etc.

Under physical education such subjects as gymnasium work, swimming, play, etc., will be illustrated.

The social activities of the school will not be neglected. It is proposed to show models and photographs of fresh-air schools, vacation school colonies.

Medical inspection in all its ramifications is to be shown by an exhibit of model rooms, instruments and record blanks used by doctors, etc.

Provide Contract.

The school board at Moline, Ill., has recently adopted a form of contract which is to be signed by manufacturers and students who are co-operating in the trade courses taught at the local vocational school. The agreement incorporates the main features of the "Cincinnati co-operative" trade instruction plan, by which students are paired and work alternate weeks in shop and school.

Among the provisions of the contract are:

1. Co-operative students will not be regarded as full shop apprentices.

2. The students shall work in pairs and 186 working days shall constitute each year.

3. Co-operative students shall not be less than 15 years of age and shall work within regulations of child labor law.

4. The manual training supervisor shall direct the work of the students.

5. Students shall be paid by their employer for the actual time they spend in the shop.

6. Special apprentices shall have two weeks vacation at the end of each school year, but otherwise shall work in the shop during summer months, except on Saturdays.

7. Employers may suspend regular work if they see fit, and place special apprentices on substitute work.

8. No co-operative student shall use tobacco or liquor in any form. All co-operative students shall have habits that keep them in good physical condition and shall be subject to discharge at any time without previous notice. The first two months' work shall be probationary.

9. Boys under 16 years of age shall work eight hours a day till they reach the age of 16, after which time they shall be employed full shop time.

10. Apprentices must buy tools when necessary to facilitate their work.

The plan has been in successful operation in Moline for a year.

Detroit, Mich. The school board has recently established a receipt system for the payment of janitors' assistants following the admission of several janitors that they retain part of the money allowed by the board for help. One engineer who had been given $68 above his regular salary of $80 paid a woman cleaner $40; another paid $1.50 per day, although he received $56 per month for help. In the future, janitors must hand in receipts for all moneys received for their helpers.

Arkansas.

Texarkana—High school will be erected; $100,000. Helena—High school will be erected. Rogers—Plans are being prepared for school.

California.

Dos Palos—2-story school will be erected. Claremont—High school will be erected. Whittier—4-room school will be erected, East Whittier. Longbeach—Eleventh street school will be erected; $32,000. Hemet—School will be erected. St Helena—High school will be erected. Vallejo—2-story high school will be erected; $50,000. Middletown—School will be erected. Alturas—School will be erected, East Alturas; $20,000. Williams—Contract was let for high school. Lodi—Propose erection of school. San Francisco—Twelve high schools will be erected. Tamalpais—Propose erection of high school.

Connecticut.

Southington—Archt. Walter P. Crabtree, New Britain, has plans for 4-room school; $12,000.

District of Columbia.

Washington—6-room school will be erected at Ivy City. 8-room school will be erected on Farragut street. Propose erection of business high school.

Florida.

Hawks Park—Plans have been prepared for school. Pensacola—Parochial school will be erected; $60,000.

Georgia.

Boston—School will be erected; $15,000. Summerville—School will be erected; $25,000. Dalton—$10,000 school will be erected.

Illinois.

Palos Park—Archt. W. A. Bennett, Chicago, has plans for 2-story school. Harrisburg—9-room school will be erected. Oak Park—Archt. E. E. Roberts has plans for 2-story school. Lake Forrest—2-story school will be erected; $50,000. Knoxville—3-story school will be erected; $15,000. Chicago—16-room school will be erected; $125,000. Bismarck—2-story school will be erected. Peoria—Contract was awarded for parochial school. Paris—Contract was awarded for school. Chicago—Nicholas Senn high school will be erected; $600,000. Decatur—School will be erected. O'Fallon—School will be erected; $18,000. Sterling—Parochial school will be erected; $35,000. Tiskilwa—Propose erection of high school; $20,000. Urbana—Propose erection of high school. Shirland—Propose erection of consolidated school. Pontiac—School will be erected.

Indiana.

Vallonia — Archts. Dunlap & Van Arman, Indianapolis, have plans for two schools. Wabash—Archts. Griffith & Fair, Ft. Wayne, have plans for high and district school; $25,000. Hudson—2-story school will be erected; $10,000. Wadesville — Archts. Shopbell & Co., Evansville, have plans for 6-room school. Mt. Vernon—One 2-room and two 1-room schools will be erected. Indianapolis — 3-story academy will be erected. 4-room school will be erected. Blackhawk—Archt. Harry Banister, Shelburn, has plans for 2-story school; $25,000. Hartsville—Archts. Dunlap & Van Arman, Indianapolis, have plans for 4-room school. Salamanca—School will be erected; $3,000. Kokomo—School will be erected; $3,500. 8-room school will be erected. Sulphur Springs—Archt. C. W. Taylor, Newcastle, has plans for 6-room school. Evansville—A junior high school for the eighth grade and freshmen of ninth grade will be erected.

Iowa.

Leon—School will be erected, South White Oak District. Albia—School will be erected, district No. 5. Mt. Vernon—School will be erected. Maquoketa—School will be erected. Keokuk—School will be erected. Ogden—$15,000, bonds, were voted for school. Haverhill—Parochial school will be erected. Packard—2-story school will be erected; $3,000. Cedar Rapids—Propose erection of school. Des Moines—Plans are being prepared for school; $25,000. Atalissa—Propose erection of school.

Kansas.

Manhattan—2-story school will be erected; $60,000. Beloit—Archt. J. H. Felt & Co., Kansas City, Mo., have plans for 2-story school; $25,000. Kensington—Archt. M. N. Bair, Hastings, Neb., has plans for 2-story high school; $18,000. Jetmore—2-story school will be erected; $10,000. Circleville—2-story school will be erected; $10,000. Independence—Archt. H. W. Brinkman, Emporia, has plans for 2-story school; $14,000. Carlyle—School will be erected. Munden—School will be erected. Ellinwood—School will be erected, Dist. No. 55. Herington—School will be erected. Purcell—8-room school will be erected. Eldorado—Propose erection of grammar school. Fairview—Propose erection of school. Arkansas City—Plans are being prepared for 3-story school.

Kentucky.

Ludlow—Archt. J. F. Sheblessey, Cincinnati, Ohio, has plans for 2½ story school.

Louisiana.

Forest Hill—School will be erected. Jena—School will be erected; $40,000. New Orleans—School will be erected, Fourteenth ward.

Architects Directory

Maryland.

Baltimore—School will be erected on North Ave. Archts. Glidden & Friz have plans for school, Warren Ave. and William Sts.; $150,000.

Massachusetts.

Boston—2-story school will be erected; $40,000. Wollaston—2-story school will be erected; $75,000. Salem—Primary and grammar school will be erected. Worcester—Archt. E. T. Chapin has plans for school. Quincy—School will be erected; $45,000. Northampton—Archt. A. L. Fechheimer, Cincinnati, O., has plans for 2-story school; $50,000. Salem—Agricultural school will be erected; $75,000. Medford—4-room school will be erected, Wellington Dist.

Michigan.

Muskegon—Archt. C. G. Vierheilig, Grand Rapids, has plans for parochial school. Hopkins—2-story school will be erected; $25,000. Big Rapids—Plans are being prepared for school; $10,000. Detroit—Plans have been prepared for two schools. Grosse Ile—Archts. Fisher Bros., Pontiac, have plans for 2-story school; $15,000. Decatur—Archt. E. A. Bowd, Lansing, has plans for 8-room school; $15,000. Clarkston—$9,975, bonds, were voted for school. Kalamazoo—Propose erection of high school. Menominee—Propose erection of manual training and domestic science school.

Minnesota.

Young America—Archts. K. T. Snyder & Co., Minneapolis, have plans for state high school; $30,000. Becker—School will be erected. Waseca—School will be erected. Winona—Archt. E. H. Myhre has plans for boys' school; $500,000. Hector—School will be erected. Mankato—4-story academy will be erected; $200,000. Avon—School will be erected. Belgrade—$12,000, bonds, were voted for school. Cohasset—Archt. F. W. Hollister, Saginaw, Michigan, has plans for 9-room school; $40,000. Eveleth—Archt. W. T. Bray, Duluth, will prepare plans for Adams school; $60,000. Aurora—High school will be erected.

Mississippi.

Hattiesburg—Propose erection of school.

Missouri.

Kansas City—Archt. C. A. Smith has plans for school. Fayette—School will be erected; $35,000. Excelsior Springs—Bonds were voted for school. Proteau—Plans are being made for school; $3,000. Sarcoxie—Archts. Garstang & Rea, Joplin, have plans for 2-story school; $15,000. Carrollton—Site was selected for school. St. Louis—Site was purchased for $500,000 high school. Sedalia—Two schools will be erected; $35,000.

Montana.

Helena—10-room school will be erected.

Henderson—Archt. Geo. W. Bick, York, has plans for 2-story school; $11,000. Howell—8-

Nebraska.

room school will be erected. Auburn—High school will be erected; $40,000. Alexandria—School will be erected. Omaha—Archt. John Latenser has been instructed to prepare plans for a standard set of eight, twelve and sixteen room buildings; $70,000 each. Plans have been prepared for high school.

Nevada.

Reno—Two schools will be erected.

New Jersey.

Merchantville—Archt. A. H. Moses, Philadelphia, Pa., has plans for 8-room school; $20,000. West Orange—School will be erected. Plainfield—School will be erected.

New Mexico.

Wagon Mound—4-room school will be erected.

New York.

Buffalo—3-story technical high school will be erected; $500,000. Archt. Howard L. Beck has plans for 32-room school; $160,000. Albany—Archts. Goldwin, Starrett & Van Vleck & Rice have plans for 3-story high school; $300,000. Waverly—Archts. Pierce & Bickford, Elmira, have plans for high school; $85,000. Lodi—5-room school will be erected; $8,000. Union—Propose issuance of bonds for school. Brooklyn—5-story high school will be erected; $425,000. Narrowsburg—Archt. Chas. F. Long, Jersey City, N. J., has plans for school. Rochester—2-story school will be erected, E. Rochester; $30,000. Yonkers—School will be erected. Olcott—2-story school will be erected. Brooklyn—School will be erected; $100,000. Mt. Vernon—High school will be erected; $250,000. Middleport—Archt. Martin C. Miller, Buffalo, has plans for 2-story school, $50,000. Brooklyn—Parochial school will be erected. Schenectady—Archt. L. Rodman Nichols has plans for school.

North Carolina.

Bridgeport—Plans are being prepared for Kirkwood school. Redwood—School will be erected.

North Dakota.

Hankinson—School will be erected, Dist. No. 3. Wilton—School will be erected. Jud—School will be erected. Schafer—Eight schools will be erected. Hensel—4-room school will be erected. McClusky—School will be erected. Willow City—School will be erected.

Ohio.

Reesville—4-room school will be erected; $25,000. Bellefontaine—School will be erected; $65,000. Bowling Green—Bonds were voted for state normal school. Marion—Archts. Marriott & Allen, Columbus, have plans for two schools; $30,000 each. Rosewood—Archt. E. E. Pruitt, Columbus, has plans for 10-room school; $30,000. Antwerp—10-room school will be erected; $25,000. Sherwood—School will be erected; $20,000. Cleveland—Archts. White & Shupe have plans for 2-story school; $35,000. Findlay—Archts. Howard & Merriam, Columbus, have plans for 8-room school; $30,000. Lucasville—Archt. F. W. Elliott, Columbus, has plans for 2-story school; $30,000. Amanda—Archts. Howard & Merriam, Columbus, have plans for 6-room school; $25,000. Grandview—School will be erected. Dola—School will be erected. Chillicothe.—Preparations begun for erection of school. Lockland—36-room school will be erected. Waynesburg—Propose an 8-room or 6-room school. Steubenville—Archt. Robert. Bellaire—Site was secured for school, First ward. Nova—School will be erected. Lakeside—Site was selected for school. Ashland—8-room school will be erected. McDermott—Plans have been

drawn for school. Cincinnati—Archt. J. F. Sheblessy has plans for parochial school. Brewster—Plans are being prepared for school.

Oklahoma.

Ponca—$25,000, bonds, were voted for ward school. Adair—2-story school will be erected. Blackwell—Propose issuance of bonds for high school. Earlsboro—Propose erection of school.

Oregon.

Ontario—Plans are being prepared for high school and 4-room grade school. Pendleton—Plans are being prepared for high school. Union—High school will be erected. Freewater—$15,000, bonds, were voted for school.

Pennsylvania.

Braddock—Archt. W. J. Shaw, Pittsburg, has plans for 2-story school. North Braddock; $60,000. Ashland—Archt. Henry D. Dagit, Philadelphia, has plans for 2-story parochial school; $15,000. Pennsville—Archt. Chas W. Grossart, Allentown, has plans for school; $5,000. Pittsburg—3-story high school will be erected; $600,000. Phoenixville—Archt. Henry L. Reinhold, Philadelphia, has plans for high school; $50,000. Williamstown—3-story parochial school will be erected. Stroudsburg—Archt. Wm. T. Towner, New York, has plans for 2-story school; $40,000. Wilkesbarre—Archt. Owen McGlynn has plans for 3-story school; $80,000. Kingston—Archts. Lathrop & Emery have plans for 8-room school; $30,000. Bloomsburg—School will be erected. Philadelphia—3-story school will be erected at Manayunk. Swarthmore—Plans are being prepared for 3½ story school. Eckley—School will be erected. Oakmont—Archts. Lord & Swann, Pittsburg, have plans for school; $60,000. Philadelphia—5-story high school will be erected; $500,000. Archt. Geo. I. Lovatt has plans for 2-story parochial school; $50,000. Dallastown—Archt. Chas. Keyworth, York, has plans for 12-room school; $35,000. Glenn Olden—Archts. Morris & Erskine, Philadelphia, have plans for 2-story school; $10,000. Meadville—Propose erection of school. Hannastown—4-room school will be erected; $15,000. Canonsburg—Archt. W. G. Eckles, Newcastle, has plans for high school.

South Carolina.

Spartanburg—School will be erected. St. Matthews—School will be erected.

South Dakota.

Cottonwood—Two schools will be erected. Plankinton—School will be erected. Kimball—School will be erected.

Tennessee.

Cookeville—Contract was let for preparatory school. Helena—Propose erection of high school; $75,000. Morristown—3-story normal and industrial school will be erected; $25,000. Jackson—Plans have been prepared for 3-story high school; $42,000. Erin—$10,000, bonds, were approved for erection of school.

Texas.

Nederland—$20,000, bonds, were voted for school. Dallas—School will be erected. Putnam—2-story high school will be erected. Florence—School will be erected. Algoa—School will be erected; $10,000. Farmersville—$25,000, bonds, were voted for high school. Jourdanton—Plans are being prepared for $25,000 school. Harlingen—$40,000, bonds, were voted for school. Teague—$10,000, bonds, were voted for school. Conroe—2-story school will be erected. Waxahachie—Propose issuance of bonds for schools. Brownsville—Propose erection of school. Amarillo—School will be erected. Dickens—2-story school will be erected. Uvalde—Propose erection of parochial school; $50,000. Charlie—School will be erected; $15,000. Flatonia—$12,000, bonds, were voted for school. Crowell—Site was secured for $15,000 school. Kyle—Plans were adopted for school.

Utah.

Salt Lake City—Plans were submitted for school. Ogden—School will be erected. Mt. Pleasant—High school will be erected.

Vermont.

Middlebury—School will be erected; $55,000.

Virginia.

Harrisonburg—School will be erected; $15,000. Richmond—School will be erected.

Washington.

Granger—Plans have been prepared for high school; $15,000. Centralia—Contract was let for high school. Endicott—Archts. Keith & Whitehouse, Spokane, have plans for high school; $30,000. Prescott—School will be erected. Mansfield—Propose erection of school.

Wisconsin.

Milwaukee—2-story school will be erected; $50,000. West Allis—2-story school will be erected; $30,000. Marinette—Parochial school will be erected; $27,000. Gresham—School will be erected; $9,000. Milwaukee—St. Lawrence school will be erected; $29,000. Merrill—School will be erected.

NEW BOOKS RECEIVED.

Pilgrim Stories. By Margaret B. Pumphrey. Cloth. Price, $0.45. Rand, McNally & Co., Chicago.

Good Health. By Ervie M. Ravenbyrne. 99 pages. Ainsworth & Co., Chicago.

Literature in the School. By John S. Welch, Salt Lake City. 236 pages. Price, $1.25. Silver, Burdett & Co., New York.

Macaulay's Essays on Clive and Hastings. By Charles R. Gaston. Cloth. $0.35. Ginn & Co., Boston.

Shakespeare's Midsummer Night's Dream. By Henry N. Hudson. 128 pages. Ginn & Co., Boston.

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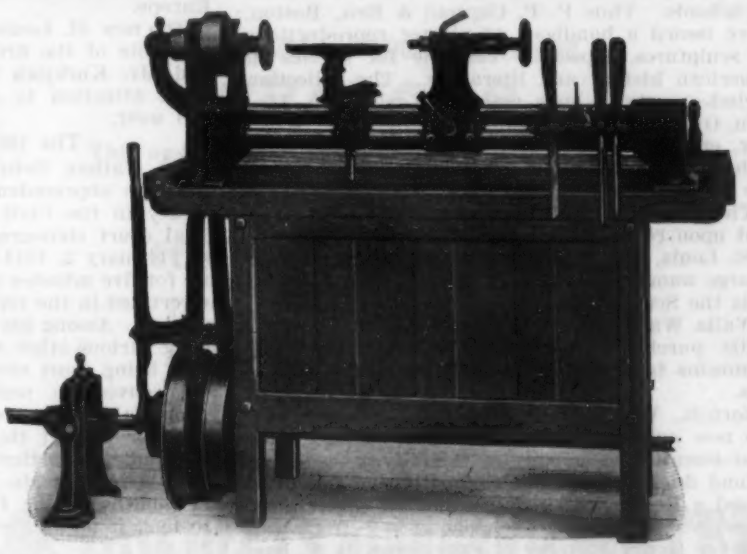

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SCHOOL TRADE NOTES.

The Fifth Annual Banquet of the Milton Bradley Company employes was held February 15 at the Highland Hotel, Springfield, Mass. Nearly one hundred officers and employes sat at table and enjoyed the entertainment furnished after the menu. Mr. W. W. Tapley presided and conveyed to the men and women assembled the goodwill of the firm. The evening closed with a minstrel performance, staged by the Bradley Standard Water Color Minstrels.

Milwaukee, Wis. The school board has recently purchased water color paints and brushes from Scott, Foresman & Co., sloyd knives and scissors from Ernst Wupper & Co., Springfield drawing kits from Thomas Charles Company, manual training tools from Gross Hardware Company, etc.

It is generally understood by educators that statuary and pictures used for decorating classrooms and school corridors should have a wider appeal than mere beauty. The wise teacher selects a cast or a print not only to brighten a room but also to interest her pupils in history, language, literature or geography. The best art publishers appreciate this correlation of art with study and are arranging their collections to meet the wants of schools. Thus P. P. Caproni & Bro., Boston, have issued a handbook of plaster reproductions of sculptures, especially valuable for classes in American history and literature. The collection includes casts of such men as Washington, Lincoln, Grant, Webster, Franklin, Longfellow, Whittier, etc., and reliefs such as the Declaration of Independence, Spirit of '76, Washington Crossing the Delaware, etc.

The pamphlet is fully illustrated and will be sent upon request to any school official.

St. Louis, Mo. The school board has purchased a large number of kindergarten tables and chairs from the Scarritt-Comstock Furniture Company.

Walla Walla, Wash. The school board has recently purchased Springfield Sanitary Drinking Fountains to equip all of its public school buildings.

Norfolk, Va. The contract for furnishing the two new public schools has been awarded to the Kent Furniture Company of this city.

Fond du Lac, Wis. The school board has purchased a Remington, a Smith and an Underwood typewriter for the high schools.

Mayor Henry Fletcher of Providence, R. I., has recently suggested to the board of education the feasibility of turning over all of its purchases to the municipal board of contract and supply. This board, according to Mr. Fletcher, has made an enviable record for economy in reducing the cost of materials bought for the city, and might do very well in handling educational supplies and books.

Freeport, Ill. Contract for blackboards in new building has been awarded to M. H. E. Beckley Mfg. Co., Chicago.

Battle Creek, Mich. The school board has recently purchased a complete set of relief maps manufactured by the Atlas School Supply Company, Chicago.

Birmingham, Ala. The Bowen Seating and School Supply Company, 333 Hood Building, has incorporated with $100,000 capital stock for the manufacture and sale of school specialties, public seating and supplies. The firm succeeds T. H. Bowen Company.

Indianapolis, Ind. Contracts for a large number of adjustable student's desks, teachers' desks and folding chairs have been awarded to the Columbia School Supply Company and for teachers' tables to the Sander and Recker Furniture Company.

Open New Office.

The Oliver Machinery Company of Grand Rapids, Mich., has recently opened a branch office in St. Louis, Mo., with Mr. A. S. Kurkjian in charge.

The office is located in Suites 400-423 Bank of Commerce Bldg., and is the sixth branch office opened by the Oliver Machinery Company. This firm has had a remarkably rapid increase in business during the past year and is supplying its woodworking machinery not only in all sections of the United States and Canada but also in Europe.

The new St. Louis office is supplied with a complete file of the firm's catalogues and literature, and Mr. Kurkjian is equipped to give his personal attention to all inquiries from the south and west.

The 100 Per Cent Man.

Mr. Nathan Behrin, an Isaac Pitman writer, made an unprecedented record for speed and accuracy in the Civil Service examination for official court stenographer held in New York city on February 2, 1911. He wrote 200 words a minute for five minutes with absolute accuracy, which is certified in the report of the Civil Service Commission. Among his competitors were 200 writers using various other systems of shorthand, some of them being court stenographers, others legislative and convention reporters, general stenographic reporters of reference, etc. Only six years a stenographer and at the pinnacle of his profession. He studied shorthand under the veteran Isaac Pitman, teacher Mr. William L. Mason, for about six months at the DeWitt Clinton High School. He took it up as a side study after school hours.

The University of Wisconsin has announced a summer course for teachers in play and physical education. The course will open June 26th and continue to August 5th. The work, which is intended for teachers, principals, playground supervisors and physical directors, will include a very thorough treatment of the entire theory of play and physical education, the organization and administration of these school activities, etc. Practical work will be a large feature. Interested persons should address Geo. W. Ehler, Director, Madison, Wis.

Publications Received.

Forest Nurseries for Schools. By W. M. Moore and E. R. Jackson. Farmers' Bulletin 423, U. S. Bureau of Agriculture, Washington, D. C.

Leadville School Report. Prepared by Frederick P. Austin, superintendent.

Financial Statement of East Orange, N. J., Public Schools. Includes brief report by Supt. Vernon L. Davey.

Philippine Education Report, 1909-10. Prepared by the Direction of Education for the Philippine Islands. Frank R. White, Manila, P. I.

Disability Pensions. By William Estabrook Chancellor, Norwalk, Conn.

Utah State School Report. Advance sheet from the eighth biennial report of the superintendent of public instruction. Prepared by Hon A. C. Nelson, superintendent.

Public Interest and the Growth of Schools. Advance sheet of biennial report, by Supt. Edward Hyatt, Sacramento, Cal. Contains in addition to a discussion of recent growth of schools, statistics on elementary schools and school property.

Fire Prevention Text Book. By A. V. Johnson, chief deputy fire commissioner for the state of Nebraska. This booklet has been arranged to give the teachers of the state of Nebraska a basis for instructing children in the dangers of fire. It contains suggestions for the observance of a "fire day," fifteen lessons on the use of fire, the care of inflammable materials and ordinary methods of guarding against conflagrations. An appendix to the booklet contains the law on the state fire commission.

Publications for Teachers. Issued by the U. S. Department of Agriculture. By Dick Crosby and F. W. Howe, Washington, D. C. 36 pages.

The Training of Teachers for the Rural Schools. By A. E. Bennett, Upper Iowa University, Fayette. A very complete discussion of the problem with suggestions for improving methods in the state of Iowa.

The Observance of Health Day in Schools. By Thos. F. Harrington, Boston. Bulletin 23, Health Education League, Boston, Mass. Price, four cents.

A Mill Tax, for the Public Schools of Virginia. Tentative report of the Virginia Education Commission by Charles G. Maphis.

The Biological Stations of Europe. By Chas. Atwood Kofoid. Bulletin No. 4 (1910), U. S. Bureau of Education. An important publication describing the biological laboratories and research stations in the principal European countries. The book is the result of a personal investigation of Prof. Kofoid and is intended to further the establishment and development of similar stations in America.

Statistics of State Universities for the year ending June 30, 1910. Bulletin No. 6, 1910 (445). Issued by the U. S. Bureau of Education, Washington, D. C.

Outline Course of Study, State Normal School, Richmond, Ky. Prepared by J. G. Crabbe, president, Richmond, Ky.

Publications of the Library of Congress to January, 1911. Price, five cents. Issued by the Library, Washington, D. C.

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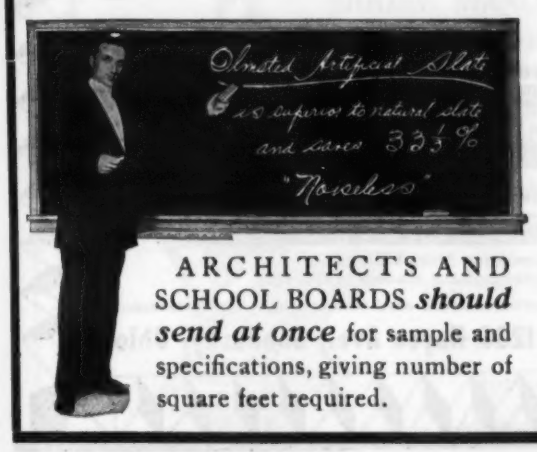

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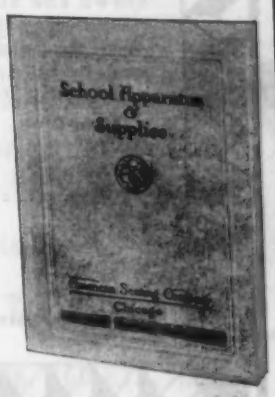

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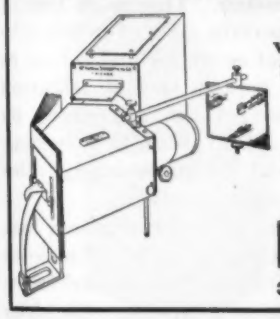

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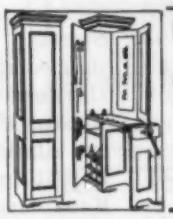

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AMONG BOARDS OF EDUCATION.

Columbia, Mo. The school board has recently taken action seeking the exclusion of secret organizations in the high schools. A resolution passed not long ago, reads:

"It is the sense of this board that fraternities and sororities have no place in a public high school.

"No student who is a member of a fraternity or sorority, either national or local, shall be entitled to represent the Columbia high school in any contest or to hold an office in any society or other student organization in said school.

"No student shall be entitled to the honor of graduation from said school, who is or has been during the year in which he applies for graduation, a member of any fraternity or sorority."

Binghamton, N. Y. The school board has recently established two centers for teaching domestic science to pupils in the upper grades. The sum of $800 was set aside for equipping the rooms.

The school board at Springfield, Ill., has been confronted recently with the task of determining a method of succession for itself. The school charter requires that when the city has reached a population of 35,000, the schools shall come under the regular state school law and the charter shall cease to exist. According to the late census, the city has safely passed the 35,000 mark. State Superintendent Blair has held that the charter no longer is in force.

Rochester, N. Y. The school board has adopted rules forbidding fraternities and sororities in the high schools. Students who are members of such secret organizations will not be permitted to take part in any high school activity not required for graduation. However, for the present year such members of the organizations as have already actually engaged in a high school activity will not be precluded from continuing for the balance of the year.

Cincinnati, O. Health Officer Landis has recently called attention to the prevalence of disorders of vision among school children, disclosed by the medical inspection in the schools, being more prevalent in downtown schools than in suburban schools and country schools.

Dr. Landis accounts for this ratio in several ways. City schools are in need of artificial light; the pupils come from tenements which furnish unfavorable hygienic conditions for growing children; contagious diseases which produce defective vision are more prevalent in the downtown districts; it is not improbable that the nature of exercise which eyes receive in the city districts has a tendency to produce myopia, whereas the suburban and country children find frequent opportunities to use their eyes for great distances.

Dr. Landis suggests a remedy that schoolrooms be painted a pale green or buff color to better diffuse light. Where artificial light is necessary, indirect lighting systems should be introduced.

Springfield, Mass. The school board has recently voted to form a class of anaemic children with a special teacher. This is in line of specializing among a certain class of pupils who for some reasons are not as strong and robust as the other pupils and require special attention and instruction. Some of the physicians on the board have been in favor of this specializing in instruction and the move inaugurates a policy that may be carried further.

A free dental clinic for poor children has been established in Oklahoma City. The local dentists' organization furnishes the needed treatment and supplies at its own expense. Children are admitted to the clinic upon recommendation

Racine, Wis. A school has been organized for exceptional children in one of the local public school buildings. An experienced teacher has been employed at a salary of $80 per month.

Kankakee, Ill. The school board has recently voted to prohibit the use of feather dusters in the schoolhouses. While not important in itself, the action is considered the first step for making the schools sanitary.

The American Portable House Company has during the past few months shipped portable school houses to all sections of the country. These shipments indicate the demand in which these buildings are throughout the United States. The points to which schools were shipped include Kirkwood, Mo.; Butte, Mont.; Hartford, Wash.; Jerry, Ind.; McKeesport, Pa.; Newcastle, Pa.; Columbus, Mont.; South Eastern Alaska, for the United States government. Repeat orders have come from Kansas City, Kans., and a fifth order from New York City. The demand for the buildings which the American Portable House Company are producing is certainly a compliment for their utility.

School Furniture

WE are very pleased to inform all of our old customers and everyone who is in want of school furniture that we have a very large stock of both Standard and Faultless school desks, recitation seats, tablet arms, teacher's desks and teacher's chairs at the present time, and can make very prompt shipments of any of these goods. It has been the habit of school furniture manufacturers not to carry these goods in stock, but to wait until after orders were received before they were made up, causing the purchaser very serious delays and vexations. If you will SEND YOUR ORDERS TO US, we will guarantee that goods will be shipped on the receipt of the order. If necessary, we can have the order followed by wire tracer, insuring very prompt and early delivery. We will also meet any prices that our competitors may give you, quality of goods considered.

Thanking you for the long and continued business that you have given us, we hope to receive your orders early. Yours truly,

HANEY SCHOOL FURNITURE CO.
GRAND RAPIDS, MICH.

MOORE SCHOOL SEATING

Holds a unique position because of its quality, prestige and healthful design

Our line includes assembly room chairs, adjustable and stationary pupils' desks, teachers' desks, chairs and general school supplies. When you are in the market, let us demonstrate that "MOORE QUALITY" is the best for materials, design and workmanship. *A postal will bring descriptive literature and prices.* Address:

MOORE MANUFACTURING CO.
Springfield, Mo.

The Peabody School Furniture Co.,

NORTH MANCHESTER, IND.

For prompt service and satisfaction, we solicit your inquiries on

School Desks, Opera and Folding Chairs

Squires Inkwell Company

Squires No. 3 Inkwell

Squires No. 12 Inkwell

Undoubtedly our flush top inkwells are the best on the market and much more extensively used than any others. Our No. 3 fits the same size hole as does our No. 8, is finished in bronze, but will nickel when so ordered.

Our No. 12 has a very short neck and extends above the surface of the desk only one-half inch. It is made in five sizes to fit holes 1¼, 1⅜, 1½, 1⅝ and 1¾ inches. It is provided with a cork stopper having an ornamental composition cap or with rubber stopper, as desired.

See next month's journal for other styles. Write for illustrated circular and prices.

Squires Inkwell Co., Pittsburg, Pa.

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High Grade

School Desks and Opera Chairs

Good Service ∴ *Right Prices*

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80-82 State St., ALBANY, N. Y.

SLATE ROOFING / URINALS } Low Prices Best Quality

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THE MAIN BANGOR SLATE CO.
SELLERS BLDG. BANGOR, PA.

MENEELY & CO. WATERVLIET, (West Troy), N. Y.
The Old Reliable Meneely Foundry, Established nearly 100 years ago.
CHURCH, CHIME, SCHOOL & OTHER **BELLS**

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Waste Baskets

Send for Price List

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"The Linenoid Baskets are just what we had been looking for. They aid in keeping the floor clean, as pencil shavings and small pieces of paper are kept off the floor, while in other baskets they fall through."

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Westfield, Mass.

Linenoid A Moulded Material made of Pure Linen

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Stuckstede & Bro., Props.
Church Bells, Peals and Chimes of best quality Copper and Tin
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Office and Factory: ARLINGTON HEIGHTS, ILL.

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"In the matter of ECONOMY they have no SUPERIOR."
"More SATISFACTORY than any we have ever purchased."
"Will fit any desk opening is a big advantage."
"Well pleased. Enclosed find additional order for 1,000."
"By far the BEST on the market."
"Prevents ink from evaporating and is easy to clean."

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2. Nothing to slam or lose.
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4. Flush with desk—allows uniformity.
5. Under plate furnished with large or narrow opening as desired.
6. The only well made that will cover any opening from 1¼ inch to 4 inches and give a neat, flush with desk job.
7. We have just what you want. Let us show you.

ASK WHOLESALER AND DESK MFGR. FOR THEM

THE AMERICAN INKWELL CO.
Adrian, Minn.

Price $1.00 per doz.—Blued or Nickeled—Liberal discount

The GEM PENCIL SHARPENER

Sharpens Both Lead and Slate Pencils

You can point a pencil very nicely with your knife when it is sharp.

When it is not—and lead dulls it very quickly—it will break the lead.

Any machine with steel cutting edges or knives will act just the same.

That is one reason for the failure of many machines. They are not practical.

We claim that ours is practical and would like to have you try them.

Price $3.50. Send for descriptive circular.

Manufactured by F. H. COOK & CO., Leominster, Mass.

Home Talent.

In the employment of teachers every board of education has to face the question of "home talent," writes Supt. F. J. Blair in the Illinois *Educational Press Bulletin*. The matter is treated very differently by different boards. In some districts no application from persons residing in the district will be considered. These boards take the ground that persons born and reared in the community are likely to have some entangling alliances, which might interfere with their success as a teacher. They perhaps have also found that it is more difficult to get rid of a teacher who is a failure if she resides in the community. They may have discovered that when the doors are open to local applicants, the pressure brought to bear upon them by local, personal and political influences are embarrassing and tend to break down the high qualifications set by the board of education. After experiencing some of these difficulties these boards have decided to shut the door to all candidates living in the district.

In many districts the boards of education seem to act on the principle that all things being equal the local candidate should receive first consideration. This plan has much in it to commend, provided the board of education will insist upon "all other things being equal." Certainly, there should be no discrimination against a well qualified candidate because she happened to be born and reared in that district.

In still other districts the principle of selection seems to be to exclude all outside candidates and elect only those who belong in the district. The arguments in favor of this principle are ancient and much worn by time and use. It is said that it keeps the money in the district, as if any teacher, after paying her board and living expenses, carried away much of her salary. It is also held that one thus born and reared in the community, understands the people and the children.

The conclusion of the whole matter is that boards of education should select their teachers upon the one principle of personal character, preparation and fitness.

TEACHERS' PENSIONS AND SALARIES.

The Indiana teachers' and superintendents' associations are actively pushing the agitation for the pensioning of teachers. Four years ago a pension law was passed by the general legislature for the benefit of teachers in the public schools of Indianapolis. A joint committee made up of the various teachers' organizations of the state has now drafted a bill which will shortly be introduced for enactment. The bill, which was drawn up by Mr. Benj. F. Moore, Mr. Richard Park, R. J. Aley, W. A. Millis and Robert I. Hamilton, follows the lines of the pension laws now in force in eastern states. The funds are to be made up by assessments of 1 per cent on the yearly salaries of all teachers, to which will be added sufficient funds from the state taxes to meet annuities which are due; also gifts and interest of any permanent funds which may be accumulated. The fund will be managed by a state board of trustees, consisting of five members. Annuities will be computed by paying to any teacher who may desire to be retired a sum equal to 1 per cent of the average yearly salary for each year of service by the applicant under the provisions of the law. The smallest amount to be paid will be $250 per annum. Any aged, infirm or disabled teacher who has served not less than fifteen years may be retired by the board. Any teacher who has taught not less than thirty-five years and who is not less than fifty-five years of age may be retired on a pension for the remainder of his or her life. Teachers who leave the school service may receive one-half of the amount paid into the fund upon application.

The Illinois Teachers' Association, during a recent convention in Chicago, adopted resolutions favoring the pensioning of teachers in cities of more than 25,000 inhabitants. At present Chicago alone benefits by the state pension act.

The teaching force of Topeka, Kan., is at the head of a movement in favor of providing pensions for teachers of the Sunflower State who have served for a period of thirty years. They have drawn up a bill which they expect to bring before the legislature very shortly for passage.

This bill is modeled after a similar bill now in force in Nebraska and provides for a retirement fund in the school treasury of all cities of the first class in the state. This fund is to be created by an assessment of not less than 1 per cent or more than 1½ per cent of every installment of salary paid to the teaching force. Also the board of education will set aside from the general fund not less than one and one-half times as much as is obtained from the assessments on the teachers' salaries.

The management of the fund is to be under the direction of the board of education. The moneys accredited to the fund shall be invested in bonds by the state school fund commission.

Under the provisions of the bill, any teacher who shall be accredited with thirty years' service may be retired, provided that at least twenty years' teaching service shall have been done in the city granting the retirement. All such retired teachers shall receive in monthly installments the sum of $500 per year during life. In case a teacher is retired from disablement by the time they have only been in the service twenty-five years, they shall receive such percentage of the $500 per annum as their years in service shall entitle them.

Teachers who withdraw before they are entitled to the pension will be given back one-half the amount that they have paid into the fund. Also in case of the death of a teacher, before he or she shall have entered into participation in the fund, such amount as may be due them shall be paid to their heirs.

Issues Report.

Charleston, W. Va. The biennial report of state superintendent Morris P. Shawkey, which has recently come from the printer, is a document of more than usual interest.

The superintendent makes many recommendations to meet the needs and demands that the gradual advancement of education in West Virginia calls for. Among the recommendations are the following:

Increase in minimum salary for teachers holding first and second grade certificates.

Higher qualifications and better pay for county superintendents.

A production tax on gas, all or most of which is to be used for school purposes.

Non-partisan or bi-partisan boards of education.

A reduction in fees charged applicants in the uniform examinations.

Provision for free text books at the earliest practicable date.

More stringent and effective child labor and compulsory school laws.

State aid for high schools.

Some relief from the embarrassment which arises under the present system of limiting levies.

Following the recommendations are articles giving arguments and figures to substantiate the propositions proposed in the recommendations.

Mr. Shawkey makes a striking use of graphic representation of school conditions. Thus a simple chart shows that the state ranks thirty-third in the matter of salaries, and small maps indicate the amounts paid by individual counties. Other maps show the attendance at the different normal schools, by counties, the distribution of high schools, the variation in the cost of education by years and salaries paid teachers in different states. Among the many pictures is a generous sprinkling of those indicating the recent movement for the teaching of agriculture, manual training and domestic science.

The total school expenditures for 1910 were $4,936,701.67, of which $4,542,611.67 went to common school purposes, and $394,090 to state educational institutions.

SCHOOL BOARD NOTES.

Supt. Geo. Morris of Bloomfield, N. J., recently reported to the board of education the success of a two years' commercial course for pupils who cannot take up the full four years work. The commercial course is so planned that technical commercial subjects predominate and pupils who have completed the two years' work are competent to enter offices as stenographers or bookkeepers. The school has kept a record of pupils who have thus entered commercial lines and has found that they are very successful.

All-Steel Quick-Acting Manual Training Vise.

A boy in school needs a better vise than a mechanic as he does not know when the capacity of the tool has been reached. Cast-iron vises in the hands of students are apt to break. Rapid-acting vises having dogs, springs, pawls and lugs soon get out of order. A manual training boy does not know how to put them in proper shape.

The Columbia School Supply Company of Indianapolis, Ind., has been working for a long while on an all-steel vise that would be free from all complicated mechanism. They have now placed on the market a vise which they claim is not only superior to all others, but more simple than all others. It has no attachments to get out of order.

The above cut represents the vise and it will be readily seen that it is very simple. The screw works in a bronze half nut. By lifting the front jaw the screw is disengaged from the nut and the jaw may be pushed in or pulled out to any desired position, then dropped. The screw will then engage in the bronze nut and the tighter the pressure on the jaw becomes, the tighter and deeper will be the thrust of the screw into the nut.

The company gives an unlimited guarantee on this vise and agrees to replace any part that may be broken or injured from any cause whatever so that a school is absolutely safe in purchasing. It will make a new era in manual training work as the purchase of this vise by a school board guarantees the equipment to remain in perfect condition for many years to come.

The price is lower than that asked for the other vises on the market.

SUPPLIES GERMAN TEACHERS.

The National German-American Teachers' Seminary has, since 1878, been supplying teachers of German for elementary and high schools throughout the United States. In German circles and among German teachers the institution is well known. With the development of the institution and the increase in pupils, teachers of German can be supplied any city of the country.

Milwaukee has, of course, accepted graduates without examination for many years past. Toledo and Indianapolis accept graduates without further examination, and Cincinnati has placed the seminary on the same level with colleges and universities. In Milwaukee and Toledo, graduates are appointed with a salary exceeding the ordinary minimum by 50 per cent. In Indianapolis, the salary exceeds the minimum by 100 per cent, and in Cincinnati by 150 per cent.

The faculty of the National German-American Teachers' Seminary is exceptionally strong. It comprises teachers of experience, each of whom is a specialist in his subject. Mr. Max Griebsch is the director. He is a very strong man. The curriculum includes the regular normal school studies with, of course, the German as the basic study.

The Engelmann School, commonly known as the German-English Academy, serves as the practice school for the seminary. It contains 300 pupils, all of whom come from German families and make unusual material for practice work. The school comprises besides the elementary eight grades, a high-school department. This affords practice for elementary as well as high-school German teachers.

The National German-American Teachers' Seminary is now prepared to supply any school board in the United States with German teachers. School boards and superintendents who are looking for candidates would do well to address Mr. Max Griebsch, care National German-American Teachers' Seminary, 558 Broadway, Milwaukee, Wis.

High School Graduating Exercises

Are rendered Attractive and Impressive by the use of

CAPS and GOWNS

An economical uniform, saving time and money at a busy season; democratic in its unifying effect and appropriate in its academic significance. A trial will convince you of its practical value to your school.

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Cotrell & Leonard
ALBANY, N. Y.

Teachers' Agencies.

A PLACING AGENCY FOR TEACHERS

TAKE THE INITIATIVE

The best teachers have to be gone after. We can help you locate them. We are in touch with several thousand. We will send you typewritten, bound reports upon candidates we recommend. These reports tell you regarding the candidate's academic and professional education, teaching experience, certificates, age, health, personality, discipline, tact, expressive power, enthusiasm, loyalty and popularity. Isn't this kind of service worth trying? Write us regarding your vacancies to-day. BUSINESS-MEN'S CLEARING HOUSE, Inc., Dept. 26, Chamber of Commerce Bldg., Denver, Colo. Established eight years.

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Our specialty is to furnish good teachers for all departments of High School work. Your call will receive our prompt, personal attention.

E. C. ROGERS, Manager, 20 East Gay St., Columbus, Ohio

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If your record will stand the closest investigation it will pay you to write us. No Fees charged for enrollment, no cost until we find a place you will accept. Can you ask for a fairer proposition?

Investigate our record for the past ten years.

THE INTERSTATE TEACHERS' AGENCY, New Orleans, La.,
offers desirable candidates to School Boards and Superintendents. M. C. VICKERS, Manager.

The best way to secure a thoroughly competent Superintendent or Teacher, is to write
Superintendent H. E. KRATZ, Manager of
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48 Van Buren St., CHICAGO
His services cost Boards of Education nothing. He has a splendid list of Superintendents and Teachers from which to select.

FREE ENROLLMENT TILL MAY 1st, 1911

We have completed the newest and best card index system available, all the essential qualities of candidates shown at a glance. We can do the business if you will give us a chance. We have the vacancies.

THE THURSTON TEACHERS' AGENCY
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REED TEACHERS' AGENCY H. E. REED, Manager
637-641 University Block, Syracuse, N. Y.

Every year we register some of the best product of the leading Universities, Colleges and Normal Schools, in addition to many men and women of experience.

We can help you to secure efficient teachers. Write to us when you need them. Send for circular.

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THE NATIONAL CLEARING HOUSE FOR MANUAL ARTS TEACHERS

Furnishes free to school authorities, teachers and supervisors of DRAWING, MANUAL TRAINING and DOMESTIC ECONOMY for Public and Private Schools, Normals, Colleges and Universities. *Registration Free.*

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Conducted by Willard N. Parker, formerly Assistant State Superintendent of Wisconsin.

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An Agency that selects and recommends teachers with care.

T. H. Armstrong, Mgr.
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RECEIVES calls at all seasons for college and normal graduates, specialists, and other teachers in colleges, public and private schools, in all parts of the country.

Advises parents about schools. WM. O. PRATT, Manager

THE ALBERT TEACHERS' AGENCY, C. J. Albert, Manager
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Twenty-sixth year. Best Schools and Colleges everywhere our permanent clients. You want to read our new booklet "Teaching as a Business."

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Recommends Teachers of all grades; Conducted primarily in the interest of School Employers.

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Over 32,000 Positions Filled 28th YEAR

We are now seeking teachers for emergency vacancies and for next year. Write us if available at the present time or in the fall of 1911.

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Circular and Membership Form Sent on Application.

THE McCULLOUGH TEACHERS' AGENCY
J. F. McCULLOUGH A Successful School and College Bureau GEO. T. PALMER

All calls for teachers direct from school authorities. Positive personal recommendations. Competent teachers in demand. Registration fee $1.00. WRITE US.

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AN AGENCY of vacancies and tells you about them and recommends you that is more. Ours **THAT RECOMMENDS** is valuable in proportion to its influence. If it merely hears is something; but if it is asked to recommend a teacher

THE SCHOOL BULLETIN AGENCY, C. W. BARDEEN, SYRACUSE, N. Y.

SCHERMERHORN TEACHERS' AGENCY, 353 Fifth Ave., NEW YORK
Oldest and best known in U. S. Est. 1855. CHAS. W. MULFORD, Proprietor.

DO YOU KNOW

That the best way to secure a thoroughly competent superintendent, principal or teacher is to apply to the

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If you do not know this send for Bulletin No. 20 and learn what we can do for you.

We are prepared to make prompt nominations for all kinds of school and college work. We can increase your range of choice and also save you time and trouble. Our services cost you nothing, and we shall be glad to hear from you when you have vacancies to fill.

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COLLEGE AND NORMAL GRADUATES A SPECIALTY

We make no recommendations unless officially called upon and then submit only the number of candidates requested.

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THE CLARK TEACHERS' AGENCIES
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Geo. W. Payne & Son..... Carthage, Ill.
Geo. Barkman.....Hamilton, O.

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American Seating Co.N.Y. & Ch'go
McConnell Sch. Sup. Co....Phila.
Columbia Sch. Sup. Co..... Indianapolis
E. W. A. Rowles.....Chicago
M. H. E. Beckley.....Chicago

APPARATUS—SCIENTIFIC.
Bausch & Lomb..Rochester, N. Y.
Riley Optical Instrument Co.... N. Y.
Columbia School Supply Co.... Indianapolis, Ind.
C. H. Stoelting Co.....Chicago
McIntosh Stereo. Co., Dept. 3.. Chicago

ATHLETIC FIELD APPARATUS.
A. G. Spalding & Bros..... Chicopee, Mass.
Fred Medart Mfg. Co..... St. Louis, Mo.
W. S. Tothill.....Chicago, Ill.

BELLS—MANUFACTURERS.
Meneely & Co....Watervliet, N. Y.
St. Louis Bell Fdry.St. Louis, Mo.

(Dealers.)

McConnell Sch. Sup. Co....Phila.
E. W. A. Rowles.....Chicago
Orr & Lockett Hdw. Co...Chicago
M. H. E. Beckley.....Chicago
American Seating Co..N. Y., Ch'go
L. A. Murray & Co..Kilbourn, Wis.

BLACKBOARDS—COMPOSITION.
N. Y. Silicate Book Slate Co..N.Y.
McConnell Sch. Sup. Co....Phila.
Haney School Furn. Co..... Grand Rapids, Mich
Columbia School Supply Co.... Indianapolis, Ind.
American Seating Co...N.Y., Ch'go
L. A. Murray.....Kilbourn, Wis.
Good Paint Co.....Chicago
E. W. A. Rowles.....Chicago
M. H. E. Beckley.....Chicago
Whitaker & Ray-Wiggin Co.... San Francisco

BLACKBOARDS—NATURAL SLATE.
E. J. Johnson.....New York
Penn. Structural Slate Co..... Worth Bldg., Easton, Pa.
Keenan Structural Slate Co.... Bangor, Pa.
Main-Bangor Slate Co. Bangor, Pa.

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McConnell Sch. Sup. Co....Phila.
Haney School Furn. Co..... Grand Rapids, Mich.
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E. W. A. Rowles.....Chicago
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BOOK COVERS.
Holden Book Cover Co..... Springfield, Mass.
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BRUSHES—FLOOR.
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Cotrell & Leonard..Albany, N. Y.
Zimmermann Bros. Clothing Co. Milwaukee

CHARTS.
Peckham, Little & Co.....N. Y.
American Seating Co...N.Y., Ch'go
Milton Bradley Co.....Springfield
McConnell Sch. Sup. Co....Phila.
Haney School Furn. Co..... Grand Rapids, Mich.
E. W. A. Rowles.....Chicago
A. J. Nystrom & Co.....Chicago
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L. A. Murray & Co..Kilbourn, Wis.
Whitaker & Ray-Wiggin Co.... San Francisco

CLASSROOM HEATERS.
Charles Smith Co.....Chicago

CLOCKS—PROGRAM.
Standard Electric Time Co.Boston
Fred Frick Clock Co..... Waynesboro, Pa.
Hahl Automatic Clock Co.Chicago
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CRAYONS.
American Crayon Co..Sandusky, O.
Standard Crayon Mfg. Co..... Danvers, Mass.
Binney & Smith Co.....New York

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American Seating Co...N.Y., Ch'go
N. Y. Silicate Book Slate Co..N. Y.
Eagle Pencil Co.....N. Y.
McConnell Sch. Sup. Co....Phila.
Haney School Furn. Co..... Grand Rapids, Mich.
Columbia School Supply Co..... Indianapolis, Ind.
E. W. A. Rowles.....Chicago
L. A. Murray & Co..Kilbourn, Wis.
M. H. E. Beckley.....Chicago
Moore Mfg. Co....Springfield, Mo.
Whitaker & Ray-Wiggin Co.... San Francisco

CRAYONS—WATER COLOR.
Am. Crayon Co.....Sandusky, O.
Prang Ed. Co.....N. Y., Chicago
Binney & Smith Co.....New York

DEAFENING QUILT.
Samuel Cabot .....Boston

DIPLOMAS.
W. E. Dunn.....N. Y.
Ames Rollinson Co....New York

DOMESTIC SCIENCE EQUIPMENT.
Orr & Lockett Hdw. Co...Chicago

DOMESTIC SCIENCE TABLES.
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E. H. Sheldon & Co.....Chicago
Grand Rapids Hand Screw Co.. Grand Rapids, Mich.
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DRAWING SUPPLIES.
Binney & Smith Co.....New York
Eagle Pencil Co.....New York
Jos. Dixon Crucible Co..... Jersey City, N. J.
Milton Bradley Co..... Springfield, Mass.
Standard Crayon Mfg. Co..... Danvers, Mass.
American Crayon Co..Sandusky, O.
Economy Drawing Table Co.... Toledo, O.
Columbia School Supply Co.... Indianapolis, Ind.
Prang Ed. Co.....N. Y., Chicago
Devoe, Dept. 5.....N. Y., Chicago
M. H. E. Beckley.....Chicago

DRINKING FOUNTAINS.
L. Wolff Mfg. Co.....Chicago
Jas. B. Clow & Sons.....Chicago
N. O. Nelson Mfg. Co...St. Louis
S. B. Tobey.....Wausau, Wis
Rundle-Spence Mfg. Co.Milwaukee
Springfield Sanitary Fountain Co Chicopee, Mass.
March-Tenny Co..... Muskegon Heights, Mich.
M. H. Foundry & Mfg. Co..... Belleville, Ill.

DUPLICATORS.
Lawton & Co.....New York

ERASERS.
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Peckham, Little & Co.....N. Y.
American Seating Co...N.Y., Ch'go
McConnell Sch. Sup. Co....Phila.
Haney School Furn. Co..... Grand Rapids, Mich.
Columbia School Supply Co..... Indianapolis, Ind.
E. W. A. Rowles.....Chicago
M. H. E. Beckley.....Chicago
L. A. Murray & Co..Kilbourn, Wis.
Moore Mfg. Co.....Springfield, Mo.
Whitaker & Ray-Wiggin Co.... San Francisco

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Haney School Furn. Co..... Grand Rapids, Mich.
Columbia School Supply Co... Indianapolis, Ind.
E. W. A. Rowles.....Chicago
M. H. E. Beckley.....Chicago
L. A. Murray & Co..Kilbourn, Wis.

FLOOR DEAFENING.
Samuel Cabot .....Boston

FLOOR DRESSING.
M. H. E. Beckley.....Chicago
Standard Oil Co...Principal Cities

GLOBES.
Peckham, Little & Co.....N. Y.
American Seating Co...N.Y., Ch'go
McConnell Sch. Sup. Co....Phila.
Haney School Furn. Co..... Grand Rapids, Mich.
Columbia School Supply Co..... Indianapolis, Ind.
E. W. A. Rowles.....Chicago
A. J. Nystrom.....Chicago
Rand, McNally & Co.....Chicago
M. H. E. Beckley.....Chicago
L. A. Murray & Co..Kilbourn, Wis.
Moore Mfg. Co....Springfield, Mo.
Whitaker & Ray-Wiggin Co.... San Francisco

GYMNASIUM APPARATUS.
Fred Medart Mfg. Co...St. Louis
A. G. Spalding & Bros..... Chicopee, Mass.
W. S. Tothill.....Chicago

HEATING AND VENTILATION.
Peck-Hammond Co.....Cincinnati
Columbus Htg. & Vtg. Co..... Columbus, O.
Lewis & Kitchen.....Chicago
Charles Smith Co.....Chicago

INK.
Barbour Tablet Ink Co..... Evansville, Ind.
M. H. E. Beckley.....Chicago

INK WELLS.
Squires Ink Well Co.Pittsburg, Pa.
U. S. Inkwell Co...Des Moines, Ia., and Evansville, Ind.
American Inkwell Co..... Adrian, Minn.

KINDERGARTEN SUPPLIES.
Milton-Bradley Co.....Springfield
E. W. A. Rowles.....Chicago
Thomas Charles Co.....Chicago
M. H. E. Beckley.....Chicago

LABORATORY FURNITURE.
Economy Drawing Table Co..... Toledo, O.
Grand Rapids Hand Screw Co.. Grand Rapids, Mich.
Columbia School Supply Co... Indianapolis, Ind.
American Seating Co...N.Y., Ch'go
C. H. Stoelting Co.....Chicago
M. H. E. Beckley.....Chicago

LANTERN SLIDES.
McIntosh Stereopticon Co., Dept. 3 .....Chicago
C. H. Stoelting Co.....Chicago

LATHES.
Shepard Lathe Co.....Cincinnati
Oliver Machinery Co..... Grand Rapids, Mich.
Orr & Lockett Hdw. Co...Chicago
E. H. Sheldon & Co.....Chicago

LIQUID SLATING.
N. Y. Silicate Book Slate Co.N. Y.
McConnell Sch. Sup. Co....Phila.
Haney School Furn. Co..... Grand Rapids, Mich.
Columbia School Supply Co.... Indianapolis, Ind.
E. W. A. Rowles.....Chicago
L. A. Murray & Co..Kilbourn, Wis.
Good Paint Co.....Chicago
M. H. E. Beckley.....Chicago

MACHINERY.
Oliver Machinery Co..... Grand Rapids, Mich.

MANUAL TRAINING BENCHES.
A. L. Bemis.....Worcester, Mass.
Grand Rapids Hand Screw Co.. Grand Rapids, Mich.
Oliver Machinery Co..... Grand Rapids, Mich.
Columbia School Supply Co..... Indianapolis, Ind.
Economy Drawing Table Co... Toledo, O.
C. Christiansen.....Chicago
E. H. Sheldon & Co.....Chicago
Orr & Lockett Hdw. Co...Chicago
M. H. E. Beckley.....Chicago
Chandler & Barbet .....Boston
Richards-Wilcox Mfg. Co..... Aurora, Ill.

MANUAL TRAINING SUPPLIES.
A. L. Bemis.....Worcester, Mass.
Grand Rapids Hand Screw Co... Grand Rapids, Mich.
Oliver Machinery Co..... Grand Rapids, Mich.
C. Christiansen.....Chicago
E. H. Sheldon & Co.....Chicago
Orr & Lockett Hdw. Co...Chicago
Moore Mfg. Co...Springfield, Mo.
Chandler & Barber.....Boston
Richards-Wilcox Mfg. Co..... Aurora, Ill.

MAPS.
Peckham, Little & Co.....N. Y.
Burgi Relief Map Establishment Rochester, N. Y.
American Seating Co...N.Y., Ch'go
McConnell Sch. Sup. Co....Phila.
Haney School Furn. Co..... Grand Rapids, Mich.
Columbia School Supply Co.... Indianapolis, Ind.
E. W. A. Rowles.....Chicago
W. & A. K. Johnston.....Chicago
A. J. Nystrom & Co.....Chicago
Rand, McNally & Co.....Chicago
M. H. E. Beckley.....Chicago
L. A. Murray & Co..Kilbourn, Wis.
Moore Mfg. Co....Springfield, Mo.
Whitaker & Ray-Wiggin Co.... San Francisco

OPERA CHAIRS.
Peckham, Little & Co.....N. Y.
American Seating Co...N.Y., Ch'go
Haney School Furn. Co..... Grand Rapids, Mich.
Peabody School Furniture Co.. No. Manchester, Ind.
E. W. A. Rowles.....Chicago
M. H. E. Beckley.....Chicago
Peter & Volz..... Arlington Heights, Ill.
Moore Mfg. Co.....Springfield, Mo.

PAINTS FOR SCHOOLS.
Patek Brothers..... Milwaukee

PENCIL MANUFACTURERS.
Jos. Dixon Crucible Co..... Jersey City, N. J.
Eagle Pencil Co.....N. Y. City
Eberhard Faber.....N. Y. City

PENCIL SHARPENERS.
F. H. Cook & Co..Leominster, Mass.
Peckham, Little & Co.....N. Y.
Eagle Pencil Co.....N. Y. City
Eberhard Faber.....N. Y. City
Jos. Dixon Crucible Co..... Jersey City, N. J.
E. W. A. Rowles.....Chicago
M. H. E. Beckley.....Chicago
L. A. Murray & Co..Kilbourn, Wis.

PEN MANUFACTURERS.
Esterbrook Steel Pen Mfg. Co.N. Y.
Eagle Pencil Co.....N. Y. City

PHYSICAL AND CHEMICAL APPARATUS.
Riley Optical Instrument Co.... N. Y.
Columbia School Supply Co.... Indianapolis, Ind.
C. H. Stoelting Co.....Chicago

PLASTER CASTS.
C. Hennecke Co..Milwaukee, Wis.
P. P. Caproni & Bro.....Boston

PLAYGROUND APPARATUS.
Fred Medart Mfg. Co..... St. Louis, Mo.
A. G. Spalding & Bros..... Chicopee, Mass.
W. S. Tothill.....Chicago

PLUMBING FIXTURES.
Columbus Htg. and Vtg. Co..... Columbus, O.
L. Wolff Mfg. Co.....Chicago
James B. Clow & Sons....Chicago
Lewis & Kitchen..Ch'go, Kas. City
Rundle Spence Mfg. Co..Milwaukee
N. O. Nelson Mfg. Co..... St. Louis, Edwardsville, Ill.

PORTABLE SCHOOLHOUSES.
American Portable House Co..... Seattle, Wash.

PROJECTION LANTERNS AND ACCESSORIES.
Bausch & Lomb..Rochester, N. Y.
Riley Optical Instrument Co.... N. Y.
C. H. Stoelting Co.....Chicago
McIntosh Stereopticon Co..... Chicago

PROGRAM CLOCKS.
(See Clocks—Program.)

RELIEF GLOBES AND MAPS.
McConnell Sch. Supply Co...Phila.
Burgi Relief Map Establishment Rochester, N. Y.

ROOFING—SLATE.
E. J. Johnson.....New York
Penn. Struct. Slate Co..... Worth Bldg., Easton, Pa.
Keenan Structural Slate Co.... Bangor, Pa.
Main-Bangor Slate Co. Bangor, Pa.

SANITARY ENGINEERS.
Columbus Htg. & Vtg. Co..... Columbus, O.
Peck-Hammond Co.....Cincinnati
Lewis & Kitchen.Ch'go, Kas. City

SANITARY FIXTURES.
Keenan Structural Slate Co.... Bangor, Pa.
Main-Bangor Slate Co.Bangor, Pa.
Penna. Struct. Slate Co., Worth Bldg.....Easton, Pa.
Peck-Hammond Co.Cincinnati, O.
Columbus Htg. & Vtg. Co..... Columbus, O.
L. Wolff Mfg. Co.....Chicago
Jas. B. Clow & Sons.....Chicago
Lewis & Kitchen.....Chicago
Springfield Sanitary Fountain Co Chicopee, Mass.
March-Tenny Co..... Muskegon Heights, Mich.
M. H. Foundry & Mfg. Co..... Belleville, Ill.
Rundle-Spence Mfg. Co.Milwaukee
N. O. Nelson Mfg. Co....St. Louis

SCHOOL BLANKS.
Peckham, Little & Co.....N. Y.
American Seating Co.N. Y., Ch'go.
McConnell Sch. Supply Co..Phila.
E. W. A. Rowles.....Chicago
A. J. Nystrom.....Chicago
L. A. Murray & Co..Kilbourn, Wis.
Mayer, Schoettle & Schairer Co. Ann Arbor, Mich.

SCHOOL FURNITURE.
Langslow, Fowler Co..... Rochester, N. Y.
American Seating Co.N. Y., Ch'go.
W. A. Choate.....Albany, N. Y.
Economy Drawing Table Co... Toledo, O.
Columbia School Supply Co... Indianapolis, Ind.
Peabody School Furniture Co.. No. Manchester, Ind.
Haney School Furn. Co..... Grand Rapids, Mich.
E. W. A. Rowles.....Chicago
M. H. E. Beckley.....Chicago
Peter & Volz..... Arlington Heights, Ill.
L. A. Murray & Co..Kilbourn, Wis.
Moore Mfg. Co...Springfield, Mo.
Whitaker & Ray-Wiggin Co.... San Francisco

SCHOOL SUPPLIES.
American Seating Co.N. Y., Ch'go.
Peckham, Little & Co.....N. Y.
N. Y. Silicate Book Slate Co. N. Y.
W. A. Choate.....Albany, N. Y.
McConnell Sch. Supply Co...Phila.
Columbia School Supply Co.... Indianapolis, Ind.
Peabody School Furniture Co... No. Manchester, Ind.
Haney School Furn. Co..... Grand Rapids, Mich.
E. W. A. Rowles.....Chicago
L. A. Murray & Co..Kilbourn, Wis.
Moore Mfg. Co...Springfield, Mo.
Whitaker & Ray-Wiggin Co.... San Francisco
Thos. Charles Co.....Chicago
M. H. E. Beckley.....Chicago
Barbour Tablet Ink Co..... Evansville, Ind.
Mayer, Schoettle & Schairer Co. Ann Arbor, Mich.

SEWAGE DISPOSAL.
N. O. Nelson Mfg. Co...St. Louis
Lewis & Kitchen..... Chicago, Kansas City, Mo.

STEEL LOCKERS.
Fred Medart Mfg. Co..... St. Louis, Mo.
A. G. Spalding & Bros..... Chicopee, Mass.
Durand-Steel Locker Co..Chicago
M. H. E. Beckley.....Chicago

SWEEPING COMPOUNDS.
Peroline Co.....Chicago

TEACHERS' AGENCIES.
Teachers' Exchange.....Boston
Pratt Teachers' Ag'cy..N. Y. City
Schermerhorn T'ch'rs' Ag'cy.N. Y.
Albany T'ch'rs' A'cy.Albany, N. Y.
Interstate T'chrs' Agency..... Rochester, N. Y.
Reed Teachers' Agency..... Syracuse, N. Y.
School Bulletin Agency..Syracuse
Central Teachers' Agcy..... Columbus, O.
Interstate Teachers' Agcy..... New Orleans, La.
Teachers Co-operative Employment Bureau..... Indianapolis
Albert Teachers' Agency..Chicago
Clark Teachers' Agency...Chicago
McCullough T'ch'rs' A'cy..Chicago
Fisk Teachers' Agency....Chicago
Yates-Fisher Ag'cy.....Chicago
School and College Bureau.... Chicago
Thurston Teachers' Agency..... Chicago
Parker Edu. Bureau.Madison, Wis.
Midland Specialists' Agency..... Warrensburg, Mo.
Manual Arts Bureau of America .....Birmingham, Ala.
Colo. Teachers' Agency....Denver
Business Men's Clearing House Denver

TYPEWRITERS.
Remington Typewriter Co...N. Y.
Smith-Premier Typewriter Co... Syracuse, N. Y.
Victor Typewriter Co.....N. Y.

VACUUM CLEANING SYSTEMS.
Vacuum Enginering Co..... New York
Mc'rum-Howell Co....New York
General Compressed Air and Vacuum Machinery Co..... St. Louis, Mo.

WALL DEAFENING.
Samuel Cabot.....Boston

WALL PAINTS.
Patek Brothers..... Milwaukee

WASTE BASKETS.
Crane Bros.....Westfield, Mass.

WATER COLOR PAINTS.
Milton-Bradley Co..... Springfield, Mass.
Am. Crayon Co.....Sandusky, O.
Prang Educational Co....Chicago
Devoe, Dept. 5...Chicago & N. Y.
Thos. Charles Co.....Chicago

WINDOW SHADE ADJUSTERS.
L. O. Draper Shade Co..... Spiceland, Ind.
O. C. Steele Mfg. Co..... Spiceland, Ind.
Geo. M. Frampton.Pendleton, Ind.
R. R. Johnson.....Chicago
E. W. A. Rowles.....Chicago
C. I. Wimmer.....Columbus, O.

WOODWORKING MACHINERY
Oliver Machinery Co..... Grand Rapids, Mich.